THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

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For the Farmers' Cabinet.

"Difficulty in Churning Butter," obviated.

THE last Number of the Cabinet contains an appeal to its editor and readers, on the difficulty of making butter in the winter, which, from its interesting source—"Young Wives"—and from its intrinsic merits, seems calculated to elicit prompt, and perhaps numerous replies. The following, which appears to embrace the true principle, and to be conclusive on the subject, is the result of the experience of a noted agriculturist, W. Allen, of N. Andover, published in the New England Farmer of January 14th, 1835, and is offered to the editor of the Cabinet for insertion, if nothing more eligible present. I regret that the inquiry appeared so late in the season, that the cause of the evil—the cold weather—will have passed away before the remedy can have reached the sufferers; and I trust "Young Wives" will not think me unreasonable, if, as an indemnity for the slight labour caused me in transcribing and in research, I request them *accurately* to test it on the first return of the cold weather of the ensuing winter, and to spend the time saved in a single process of churning, in giving, through the Farmers' Cabinet, the result to the public, and to

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Philadelphia, Second mo., 1845.

"Having thought much on the subject, and experienced all the uncertain results of which others complain, I have been led to the conclusion,—which experiments have confirmed—that there is a certain degree of heat,—could it be ascertained—to which the cream might be raised, which would ensure a quick process in the formation and separation of the butter from the whey or milk, at the same time preserve the quality of the butter, and prevent that frothiness and softness which are the never failing result of long continued churning.

"To ascertain the degree of heat necessary to insure a short process, we heated the cream on the hearth to about 72 or 73 degrees—this, with heat in the churn, which was scalded with boiling water, gave to the cream about 75 degrees heat. In six or seven trials, during the months of November and December, the longest process in churning was twenty minutes, the shortest ten. The butter has been uniformly sweet and hard, and in nothing inferior to that made in October, except in colour. The

last churning was on the 30th of December last. I attended to the whole process carefully. The cream when first put into the churn, was 80 degrees—I waited till the heat had fallen to 75 degrees, and immediately began the operation. The butter was formed and ready to take out of the churn in just ten minutes. By the way, I use, and have for several years, a rocking churn, and think it the best, all things taken into view, that has ever been in use in New England.

* * * * * * * * *

"N. B. Since writing the above, one of my neighbours, hearing of my successful experiments, called on me to borrow my thermometer,* to make a similar experiment—he informed me that their two last trials to make butter, after churning twenty-four hours, had been unsuccessful. They accordingly prepared the cream as above directed, heating to 75 degrees—the butter came in five minutes—was hard and good for winter butter."

By the editor of the N. E. Farmer, T. G. Fessenden: "The above is a valuable paper, and establishes a fact of much importance in housekeeping economy. We have frequently recommended, and published the recommendations of others, to warm cream in cold weather, previous to any attempt to convert it into butter. But the temperature to which it should be raised, has not, so far as we know, been ascertained previous to the abovementioned experiments of our highly esteemed friend and correspondent."

Manures.

The following statement of experiments lately appeared in the Albion, and has been kindly communicated by the writer for the Cabinet. We need hardly say that it would give us much pleasure, and add to the value of our paper, to hear frequently from our highly valued friend at Sandy Spring.—Ed.

Professor Hallowell's experiments to ascertain the comparative efficacy of various manures.

All the value which experiments in agriculture can derive from great care in conducting them, and from high character for science and exactness on the part of the experimenter, belongs to the following statement. But the best conducted experiments may lead to disappointment when we attempt to imitate them, without acquaintance with the various circumstances which may have influenced the results in any given case, such as climate, soil, temperature, &c.

The residence of Professor Hallowell, near Sandy Spring, in Montgomery county, Maryland, is in latitude 39°. 10′. N. The general elevation of the country above the tides of the Potomac is from 400 to 470 feet. The greater elevation, however, has, independent of latitude, a sensible effect, as, at Sandy Spring, grain ripens eight or ten days later than in the vicinity of Washington, at the distance of only twenty miles, and in the same latitude. The soil is, as stated by Mr. H., thin, but from recent experiments, very susceptible of improvement; with well and spring-water, the latter very abundant, and as pure, perhaps, as any in the world.

The mean temperature of the region where these experiments have been, and still are in progress, for the twelve seasons of the years 1828–9–30 and 31, was 51.63, and combining this mean with that produced by monthly observations made with equal care, during the same period, on perennial springs, the mean temperature at Sandy Spring comes out 52.776 deg. or 52¾ deg. Fahrenheit.

The prevailing timber is oak of various species, hickory of various species, Liriodendron or poplar, red flowering maple, black gum, &c., underwood the most abundant, dogwood.

The face of the country is moderately hilly, or in parts only rolling, and extremely pleasing to the eye, particularly the well-improved farms; in brief, it is a section of our country in a high degree capable of improvement, and we may conclude by saying, that a salutary and regenerating spirit has breathed its influence into the minds of its people, which is giving activity and efficacy to the modes adopted for its melioration. That such influence, with the examples of such friends of agriculture, and of all *peaceful* and useful arts, will increase, bringing forth good fruits, more and more abundantly, is our wish and our confident hope.

In conclusion of these hasty remarks, on some of the exterior circumstances under which the experiments were made, we submit, and invite to the following letter, the particular attention of the reader.

Rockland, Eleventh mo. 22nd, 1844.

Esteemed Friend,—In compliance with the request contained in thy letter of the 12th inst., I forward a statement of the results of my experiments with different kinds of manures.

Experiment 1.—On the 20th of the fourth month, 1843, I sowed bone-dust, as it is called, on a part of my wheat, at the rate of about six bushels to the acre. The cost of

* The price of a suitable instrument is a dollar or less.—Index.

the bones in Baltimore, was forty cents a bushel, and it cost ten cents a bushel to transport them to my farm. The wheat where the bone was put, was not improved by it; but a striking difference was soon perceived in the clover that had been sown among the wheat about three weeks before the bone. In the first crop mowing the past summer, there was amply sufficient, where the bone had been put, above what was on the adjacent parts, to pay for the bone, and all the trouble of putting it on; and the second growth gave me an excellent crop of seed, while on the parts where the bone was not put, there was no seed worth gathering. The seed is not got out yet, but several of my friends who are considered good judges in such matters, thought there would be more seed than would pay for the first cost of the bone.

Experiment 2.—At the same time I sowed bone on my wheat, I sowed some at the rate of six bushels per acre on my oats, which had been put in ten days before, and sowed with clover. There was a great increase in the oats, both in the size of the straw and in the quantity and weight of the grain; and the clover the past season was several times over more abundant where the bone was put than where there was none. There is no question that the first cost of the bone was fully returned in the additional quantity of oats that resulted from its application.

Experiment 3.—On the 2nd of the fifth month, 1843, I put a bushel of the bone at the rate of six bushels per acre, on four rows of my corn in the hill, by dropping the corn, then putting the bone on it, and covering both up together. The difference in the appearance was manifest through the summer. When we gathered the corn we kept these four rows, and the four rows on the one side, and the four rows on the other, all separate. From the four rows where the bone was put, there were two and three-quarter flour barrels full of real good ears, and a half barrel of short corn; while from the four rows on each side, there was a scant flour barrel full of good ears, and three-quarters of a flour barrel of short corn. This gave me more than one and a half flour barrels full of good corn for a bushel of bone, or fifty cents, besides there being more than double the quantity of fodder where the bone was put.

Experiment 4.—On the 3rd of the tenth month, 1843, I put in my wheat, on one part of which I put 15 bushels of bone per acre, on another part 30 bushels of finely ground charcoal per acre, on another stable manure, on another a coating of wheat straw, and a part was left without anything. The bone and charcoal were sown broadcast, and harrowed in with the wheat. The charcoal did no good whatever, either to the wheat, or the clover that was sown amongst it, the part where the charcoal was, and that where nothing was put, alike not producing as much wheat as was sown on it, and they are now bare of clover, while I had fifteen bushels of wheat per acre where the bone was put, and a luxuriant growth of clover, a large portion of which headed out, and filled well with seed. The wheat was larger, and the heads better filled, and the clover larger, where the bone was put, than where the ground was dressed with stable manure. The wheat straw did *some* good, but comparatively little.

Experiment 5.—On the 26th of the third month, 1844, I put in my oats and clover, dressing the ground, except a small part, with ten bushels of bone to the acre. On one half the ground the bone was harrowed in with the oats, on the other half the bone was sown on the top after the harrowing. The crop of oats was greatly increased where the bone was put, but it was much best on that part where it had been harrowed in. The yield, however, was not so great as last year, which I attribute partly to the dryer season this year. The clover is far better where the bone had been, than it was on the part left for experiment without anything.

Experiment 6.—On the 24th of the fourth month, 1844, I planted my corn, putting poudrette in the hills at the rate of one and a half barrels per acre, and covering it up with the corn. I left a few rows for experiment without any, which were decidedly inferior to the others in the number and size of the ears, and the size of the stalks. Also that which had been dressed with poudrette, ripened considerably earlier—I should think at least ten days. The beneficial effects of the poudrette were much the most remarkable on the part of the field where the land was poorest—indeed, on a small part where the ground was very good, I was scarcely able, at pulling time, to see any difference.

Experiment 7.—On the 19th of the ninth month, 1844, I put in my wheat, four contiguous acres of which were manured as follows, viz: One with 200 lbs. of guano, finely pulverized, and mixed the previous day with about an equal bulk of plaster of paris; another with 16 bushels of bone; a third with four barrels of poudrette, and the fourth with a mixture of all these, and a small part was left without anything. The manures were all harrowed in with the wheat. The rest of my wheat ground was dressed with bone. The cost of the manure

on each of these four experiment acres was the same, viz., $8 per acre. A marked difference is visible at this time in favour of that which was dressed with guano and plaster, and it all looks much better than that which was left without manure. The guano was obtained of Samuel R. George, of Baltimore, at $3 per 100 lbs. I mixed it with plaster, to remove a part of its acrid quality that might injure the young germ, and also to condense the volatile portions, and render the sowing of it less unpleasant. It costs me 30 cents per 100 lbs. to get the guano hauled from Baltimore, 28 miles. The poudrette got of J. Tatum, costs $1 50 per barrel in Philadelphia, and 50 cents a barrel to get it here by way of the District of Columbia. At my farm the bone stands me in 50 cents a bushel, guano $3 30 per 100 lbs.; poudrette $2 per barrel, and plaster $1 30 per barrel. The benefit of plaster, as far as I have tried it, is very small indeed, if any. My land is, however, very poor, mostly a stiff clay, full of white flint stones. Yet it seems very susceptible of improvement, and I am in hopes that when I shall get it a little more improved, the effects of plaster will be more manifest. I have made no experiment till the present fall, to determine the comparative values of bone and guano. My impression is, however, that while the effects of guano may be more striking in the first crop, bone will be more lasting. The experiments with guano and bone, as given in several agricultural publications, are by no means satisfactory to me, because they give a statement of the produce of only the first crop after the application of the manures, where guano, from being in a state more ready to be immediately assimilated in the growing vegetable, would possess a decided advantage over bone, which is in a coarse state principally. The different crops from the time the manures are applied till the ground is broken up again, and the condition and quality of the ground when then broken up, should all be taken into account in making up the estimate of the comparative value of different manures. It is to this end that I am instituting my experiments. I may state, in conclusion, that I have no doubt the effects of bone dust and guano, are much more striking upon old worn out lands, such as these to which I have applied them, than they would be to those that are richer. Indeed it is reasonable that lands which have been long cropped, without having had anything returned to them, must eventually become deprived of phosphate of lime and other inorganic materials, which, existing in but small quantities in soils, are yet indispensably necessary to the growth of grains and nutritious vegetables. And although such soils may contain every other ingredient necessary to vegetable growth, yet wanting the phosphate of lime, grains, clover, &c., which contain this, could not grow till it is applied in bone dust or something of the kind. So of other inorganic elements which enter into the vegetable economy.

It would give me great pleasure indeed to have an opportunity of *showing* thee my experiments, and of going with thee to see my cousin and neighbour Roger Brooke, to whom I read thy letter last evening, and who expressed an earnest wish that thou might find time to carry out thy intention as therein expressed.

Thy sincere friend,

Benjamin Hallowell.

John S. Skinner.

A Farm Cultivated by the Insane.

In our former notices of the systems employed in France for the amelioration and cure of insanity, we pointed out that the occupation of the patients in various useful employments, was amongst the most successful modes of treatment. When the increase of patients in the two asylums, the Bicêtre and the Salpetrière, at Paris, demanded further accommodation, the unfortunate inmates were employed to assist in the new buildings, and with results extremely favourable to themselves. When these works were finished, the medical directors of the hospital dreaded the effects of a relapse into inactivity on their patients, and employed them in the fields and grounds adjoining the two edifices. So active were the labourers, and so delighted with their work, that they did everything which could be done in a very short time, and want of work was again threatened. To avert it altogether, M. Ferrus, one of the physicians of the Bicêtre, conceived the idea of obtaining a farm for the permanent employment of his willing labourers. With this view he applied to the government; but as there were no funds at the disposal of the ministry which could be applied to the commencement of such an undertaking, and as every acre of cultivated ground near Paris was, of course, occupied, his scheme seemed at first hopeless. Still the benevolent projector was not to be daunted, and as he could not find a cultivated spot of ground fit for his purpose, he looked out for a barren one.

After many inquiries and surveys, M. Ferrus fixed upon an estate situated about two miles from the Bicêtre, near the *barrierè de la Santé.* It was the most wretched piece of ground imaginable. So entirely was it

covered with stones, that there was not an acre in the whole tract which seemed capable of being successfully cultivated; and though formerly occupied by enterprising farmers, it had long been abandoned. A homestead which they had built was in ruins, and the barns and sheds in the last stage of decay. Upon this unpromising farm M. Ferrus fixed, and by the end of 1832, several of the Bicêtre patients were set to work to enclose about ten acres of the least barren portion. This enclosure was cleared and levelled with such success, that its first year's produce was sold for about £57, nearly ten pounds more than the annual rent of the entire farm. Encouraged by this result, M. Ferrus applied to the *administration des hospiteaux* to have the patients transferred from the Bicêtre altogether, that they might live entirely on the farm. The ruined house and the want of funds at head-quarters applicable to its repair, seemed at first powerful objections to this measure; but M. Ferrus, having good workmen at his command, overcame them. He got the government to supply tools—as it had previously done for the farming operations—the homestead was soon put into a habitable state by those for whose occupation it was designed, and in 1835 was tenanted by a number of the insane. The farm was now regularly organized; an experienced agriculturist, M. Béguin, was engaged to direct and superintend the operations of the labourers; the whole of the land belonging to the estate was taken into the original enclosure, and each succeeding year has been crowned with not only an increase of agricultural produce, but with an increase in the list of cures amongst the patients. The only inconvenience the managers of the farm have to contend with, arises from any accidental want of employment which may happen. So anxious are the majority of the unfortunates for work, that they become troublesome when they do not obtain it. This was most felt in winter, when farming operations are for a time suspended; but to fill up this blank space, the farmers of St. Anne are annually set to bleach the whole of the linen used in the two hospitals; a task which they perform cheerfully and well, saving to those establishments upwards of £400 pounds per annum.

Besides the excellent effects which have been produced on those patients employed and residing on the St. Anne farm, it has been found of the utmost benefit to less convalescent inmates of the insane hospitals. By allowing them, at first, to see the others at work, they soon get a desire to join in it, which, when the medical officers deem them well enough, they are allowed to do. In short, the effects of such a healthful employment as that necessary to the culture of land, has been found of the utmost benefit to all classes of insane patients. The success of the French farm will, we trust, encourage the directors of our native lunatic asylums to adopt similar methods of cure; which, properly managed, appear to be as profitable as they are efficacious.—*Chambers' Journal.*

From Hovey's Magazine of Horticulture.

Progress of Horticulture in Indiana.

By the Rev. H. W. Beecher, Indianapolis, Indiana.

The Horticultural Society's Fair is held annually, on the 4th and 5th of October. Experience has shown that it should be earlier; for, although a better assortment of late fruits, in which, hitherto, we have chiefly excelled, is secured, it is at the expense of small fruits and flowers. The floral exhibition was meagre—the frost having already visited and despoiled our gardens. The chief attraction, as, in an agricultural community, it must long continue to be, was the exhibition of fruit. My recollection of New England fruits, after an absence of more than ten years, is not distinct; but my impression is, that so fine a collection of fruits could scarcely be shown there. The luxuriance of the peach, the plum, the pear and the apple, is such, in this region, as to afford the most perfect possible specimens. The vigor of fruit trees, in such a soil and under a heaven so congenial, produces fruits which are very large without being coarse-fleshed; the flavor concentrated, and the colour very high. It is the constant remark of emigrants from the east, that our apples surpass those to which they have been accustomed. Many fruits which I remember in Connecticut as light-coloured, appear with us almost refulgent. All summer and early fall apples were gone before our exhibition; but between seventy and a hundred varieties of winter apples were exhibited. We never expect to see finer. Our most popular winter apples are: Yellow Bellflower; White Bellflower; [called *Detroit* by the gentlemen of Cincinnati Horticultural Society,—but for reasons which are not satisfactory to my mind. What has become of the White Bellflower of *Coxe*, if this is not it?] Newtown Spitzenberg, exceedingly fine with us; Canfield, Jennetin or Neverfail, escaping spring frosts by late blossoming, very hardy, a great bearer every year; the fruit comes into eating in February, is tender, juicy,

mild and sprightly, and preferred with us to the Green Newtown pippin—keeping full as well, bearing better, the pulp much more *manageable* in the mouth, and the apple has the peculiar property of bearing frosts, and even freezing, without material injury; Green Newtown pippin; Michael Henry pippin, (very fine;) Pryor's Red, in flavour resembling the New England Seek-no-further; Golden russet, the prince of small apples, and resembling a fine butter-pear more nearly than any apple in our orchards, —an enormous bearer; some limbs exhibited were clustered with fruit, more like bunches of grapes than apples;—Milam, favourite early winter; Rambo, the same. But the apple most universally cultivated is the Vandevere pippin, only a second or third-rate table apple, but having other qualities which quite ravish the hearts of our farmers. The tree is remarkably vigorous and healthy; it almost never fails in a crop; when all others *miss*, the Vandevere pippin *hits;* the fruit, which is very large and comely, is a late winter fruit—yet swells so quickly as to be the first and best summer cooking apple. If its flesh—which is coarse —were fine, and its—too sharp—flavour equalled that of the Golden russet, it would stand without a rival, or near neighbour, at the very head of the list of winter apples. As it is, it is a *first-rate* tree, bearing a *second-rate* apple. A hybrid between it and the Golden russet, or Newtown Spitzenberg, appropriating the virtues of both, would leave little more to be hoped for or wished. The *Baldwin* has never come up to its eastern reputation with us; the Rhode Island Greening is eaten for the sake of "auld lang syne;" the Roxbury russet is not yet in bearing—instead of it several false varieties have been presented at our exhibitions. All the classic apples of your orchards are planted here, but are yet on probation.

Nothing can exhibit better the folly of trusting to *seedling* orchards for fruit, for a main supply, than our experience in this matter. The early settlers could not bring trees from Kentucky, Virginia or Pennsylvania—and, as the next resort, brought and planted seeds of popular apples. A later population found no nurseries to supply the awakening demand for fruit trees, and resorted also to planting seed. That which at first sprang from necessity, has been continued from habit, and from an erroneous opinion that seedling fruit was better than grafted. An immense number of seedling trees are found in our State. Since the Indiana Horticultural Society began to collect specimens of these, more than one hundred and fifty varieties have been sent up for inspection. Our rule is to reject every apple which—the habits of the tree and the quality of its fruit being considered—has a superior or equal already in cultivation. Of all the number presented, not six have vindicated their claims to a name or a place, and not more than *three* will probably be known ten years hence. While, then, we encourage cultivators to raise seedlings experimentally, it is the clearest folly to reject the established varieties and trust to inferior seedling orchards. From facts which I have collected, there have been planted during the past year, in this State, at least one hundred thousand apple trees. Every year the demand increases. It is supposed that the next year will surpass this by at least twenty-five thousand.

In connection with apple orchards, our farmers are increasingly zealous in pear cultivation. We are fortunate in having secured to our nurseries not only the most approved old varieties, but the choicest new pears of British, Continental or American origin. A few years ago to each one hundred apple trees, our nurseries sold, perhaps, two pear trees; now they sell at least twenty to a hundred. Very large pear *orchards* are established, and in some instances are now beginning to bear. I purchased Williams' Bon Chrétien in our market last fall for 75 cents the bushel. This pear, with the St. Michael's, Beurré Diel, Beurré d'Aremberg, Passe Colmar, Duchesse d'Angouleme, Seckel, and Marie Louise, are the most widely diffused, and all of them regularly at our exhibitions. Every year enables us to test other varieties. The Passe Colmar and Beurré d'Aremberg have done exceedingly well,—a branch of the latter, about eighteen inches in length, was exhibited at our Fair, bearing over twenty pears, none of which were smaller than a turkey's egg. The demand for pear trees this year, has been such that our nurseries have not been able to answer it—and they are swept almost entirely clean. I may as well mention here that, besides many more neighbourhood nurseries, there are in this State eighteen which are large and skilfully conducted.

The extraordinary cheapness of trees favours their general cultivation. Apple trees, not under ten feet high, and finely grown, sell at *ten*, and pears at *twenty* cents; and in some nurseries, apples may be had at *six* cents. This price, it should be recollected, is in a community where corn brings from twelve to twenty cents only, a bushel; wheat sells from forty-five to fifty; hay at five dollars the ton. During the season of '43–'44, apples of the finest sorts,—Jennetin, green Newtown pippin, &c.—sold at my door, as

late as April, for *twenty-five* cents a bushel; and dull at that. This winter they command *thirty-seven* cents. Attention is increasingly turned to the cultivation of apples for exportation. Our inland orchards will soon find an outlet, both to the Ohio river by rail-road, and the Lakes by canal. The effects of such a deluge of fruit is worthy of some speculation. It will diminish the price but increase the *profit* of fruit. An analogous case is seen in the penny-postage system of England. Fruit will become more generally and largely an article, not of luxury, but of daily and ordinary diet. It will find its way down to the poorest table—and the *quantity* consumed will make up in profit to the dealer, what is lost in lessening its price. A few years and the apple crop will be a matter of reckoning by farmers and speculators, just as is now, the potatoe crop—the wheat crop—the pork, &c. Nor will it create a home market alone. By care it may be exported with such facility, that the world will receive it as a part of its diet. It will, in this respect, follow the history of grains and edible roots, and from a local and limited use, the apple and the pear will become articles of universal demand. The reasons of such an opinion are few and simple. It is a fruit always palatable—and as such, will be welcome to mankind whatever their tastes, if it can be brought within their reach. The Western States will, before many years, be *forested* with orchards. The fruit bears exportation kindly. Thus there will be a *supply;* a possibility of distributing it by commerce,—to meet a taste already existing. These views may seem fanciful—may prove so; but they are analogical. Nor, if I inherit my three-score years and ten, do I expect to die until the apple crop of the United States shall surpass the potatoe crop in value, both for man and beast. It has the double quality of palatableness, raw or cooked,—it is a *permanent* crop, not requiring annual planting,—and it produces more bushels to the acre than corn, wheat, or, on an average, than potatoes. The calculations may be made, allowing an average of fifteen bushels to a tree. The same reasoning is true of the pear;—it and the apple, are to hold a place yet, as universal eatables—a *fruit-grain*, not known in their past history. If not another tree should be set in this county, (Marion co.) in ten years the annual crop of apples will be 200,000 bushels. But Wayne county has double our number of trees,—suppose, however, the 90 counties of Indiana to have only 25 trees to a quarter section of land, i. e., to each 160 acres, the crop, of 15 bushels to a tree, would be nearly *two millions*.

The past year has greatly increased the cultivation of small fruits in the State. Strawberries are found in almost every garden, and of select sorts. None among them all is more popular—or more deservedly so—than Hovey's Seedling. We have a native white strawberry, removed from our meadows to our gardens, which produces fruit of superior fragrance and flavor. The crop is not large—but continues gradually ripening for many weeks. The blackberry is introduced to the garden among us. The fruit sells at our market for three to five cents,—profit is not therefore the motive for cultivating it, but improvement. I have a *white* variety. Assorted gooseberries and the new raspberries, Franconia and Fastolff, are finding their way into our gardens. The Antwerps we have long had in abundance. If next spring I can produce rhubarb weighing two pounds to the stalk, shall I have surpassed you? I have a *seedling* which last year without good cultivation, produced petioles weighing from eighteen to twenty ounces. My wrist is not very delicate, and yet it is much smaller in girth than they were.

In no department is there more decided advance among our citizens than in floriculture. In all our rising towns, yards and gardens are to be found choicely stocked. All hardy bulbs are now sought after. Ornamental shrubs are taken from our forests, or imported from abroad, in great variety. Altheas, rose acacia, jessamine, calycanthus, snowberry, snowball, sumach, syringas, spicewood, shepherdia, dogwood, redwood, and other hardy shrubs abound. The rose is an especial favourite. The Bengal, Tea and Noisettes, bear our winters in the open garden with but slight protection. The Bourbon and Remontantes will, however, drive out all old and ordinary varieties. The gardens of this town would afford about *sixty* varieties of roses, which would be reckoned first-rate in Boston or Philadelphia.

While New England suffered under a season of drought, on this side of the mountains the season was uncommonly fine,—scarcely a week elapsed without copious showers, and gardens remained moist the whole season. Fruits ripened from two to three weeks earlier than usual. In consequence of this, winter fruits are rapidly decaying. To-day is Christmas—the weather is spring-like,—no snow,—the thermometer this morning 40°. My Noisettes retain their terminal leaves green; and in the southward-

looking dells of the woods, grasses and herbs are yet of a vivid green. Birds are still here,—three this morning were singing on the trees in my yard. There are some curious facts in the early history of horticulture in this region, which I meant to have included in this communication; but insensibly I have, I fear, already prolonged it beyond your convenience.

Indianapolis, Dec. 25th, 1844.

How to Raise Turkeys.

The attention of our readers has been repeatedly called to the subject of raising poultry—in the vicinity of our large cities, perhaps no stock is so profitable. Some good practical hints may be taken from the following, which the editor of the New Jersey Journal gives as the result of considerable experience of his own. The young turkey is proverbially a tender chick, and it is a nice matter to know how to manage him properly.—Ed.

We believe it is common among farmers to say that a turkey's head costs twice as much as its body is worth when fattened. This we do not believe to be true, if he is properly managed; but on the contrary, we believe that nothing can be raised and turned to so great a profit. But turkeys must have care, especially when young; but this care will not entrench on the business of the farmer, as it may be done by females or the younger branches of the family,—and beside, the little damage they may do to grass, or other things, must not be magnified tenfold, as is usually the case. But by proper attention they will do no damage at all.

Before giving our rules to be observed in raising turkeys, let us draw a comparison. There are but few farmers but can raise 100 turkeys,—these 100 turkeys will weigh, when fattened, in December, upon an average, seven and a half pounds each, full dressed. We say *full dressed*, for it is the practice in some places to divest the turkey of nothing but its head and feathers, and then take it to market. A practice as uncivilized as it is disgusting. These hundred turkeys then will weigh 750 lbs., which in market are equal to 1,500 lbs. of pork. But if the male turkeys are kept until February or March, they will not only increase in weight, twice the amount of their feed, but the price in market will be much higher.

We will now give the rules to be observed in raising and fattening them founded wholly on our experience. Turkeys intended for breeders, must be kept well during the winter. If put in good condition, however, in December, it takes but little feed to keep them so. Their nests for laying must be made with hay or oat straw under cover, and be well protected from the weather, and from vermin. When incubation commences, the turkey must not be disturbed, and if she does not come from her nest for food and water, she must have both placed by her on her nest. When the young turkeys are hatched, they may be allowed to remain one day on the nest, or if removed let them be sheltered in a warm place, and plenty of straw for them to set upon, for they are now extremely liable to take cold. The second day feed them with curds, or warm clabbered milk mixed with a little Indian or barley meal. They must be kept up and fed in this way for two or three days, and longer if the weather should be cold or rainy, but as soon as a warm and pleasant day comes, let them out at nine or ten o'clock, and shut them up at four—and this practice of letting them out and shutting up *must* be followed for five or six weeks, and on no account let them get wet. When a young turkey begins to droop there is but little hope for it. There is no danger of keeping them too warm. When they are five or six weeks old put a little grease on their heads to preserve them from lice.

At the age of six or eight weeks the turkey is more hardy, but still should not be exposed to rains or the damp nights, for a few weeks longer. If the farmer has a plot of grass let him enclose a yard with a high fence, and crop the wings of the old turkeys, and continue to feed them with clabbered milk, and whatever else he pleases that comes from the kitchen, such as broken bread, potatoes, and the like. If he has a clover field, as soon as it is mown, let them run on it, and they will live on young clover. And as soon as the crops are off the ground, say in August or September, let them range on the farm; but see to it, that they come to their roosting place at night, and have water.

In December the turkeys will be large enough to fatten, and for this purpose select as many as you please, and shut them up,—next take to the mill a few bushels of *ears* of Indian corn and have it ground—then boil potatoes, and mix the meal with the scalding water and potatoes in a tub, say in the proportion of one bushel potatoes to one peck or more of meal, and stir them well together, then let it cool, but give it to the turkeys as warm as they will bear it, and as much as they will eat, and in two weeks and a half, they will be fat enough for market, and for an alderman's dinner.

We do not take this from books, but from several years experience. We kept an ex-

act account of the expense of raising and fattening a flock, and at the rate of ten cents a pound full dressed—we received $72, while our cost exclusive of sour milk, was less than $10. If any farmer does not wish to be at the *special* trouble of raising them, but should have a small flock to fatten, that have lived "in spite of wind and weather," let him adopt our rules of fattening, and he will "save much corn." On a large farm, and with a large yard and a butter dairy, with proper attention we believe it may be made a leading business to great profit.

For the Farmers' Cabinet.

Experiments with Gas Liquor on Grass Lands.

The practice of publishing the results of experiments only when they are successful, is but too common both with agriculturists and those engaged in more abstruse researches. Now we regard an experiment as designed for instruction—and for that purpose, failure is sometimes as valuable as success—not only to ourselves but to others, in guarding against similar courses, and leading by the investigation of the causes of failure to the discovery of unexpected truths. We shall therefore submit the following remarks and details, leaving the results of further researches for a subsequent memoir.

The true economy of waste manures, by which is meant the application of the waste products of factories, to the amelioration of the soil, is confessedly one of the most important objects of modern agricultural science. Not that the idea is novel, but the extension of the practice to the including of many substances hitherto thought useless, is one of the immediate consequences of the application of chemistry to the farm. Indeed it is thought that but few of those discarded and frequently nauseous matters may not be employed with marked success, and accordingly the journals of Europe afford us long series of experiments, in which the waste of the dyer, leather-dresser, button-maker, sugar-refiner, and glue and gas manufacturer have been tried with known manures, and their relative value thus tested. Especially has this been the case with ammoniacal refuse. Among these the liquor which results from the distillation of coal, and which flows above the gas tar in the tank, would seem to merit attention, since its richness has caused it to be employed in the manufacture of ammoniacal salts, both in Europe and this country; and Scottish farmers have applied it to grass lands with extraordinary results. We endeavoured to obtain the same wished for consummation in the following manner:—On the farm of Mary Lake, in Delaware county, between Cobbs and Darby creeks, a portion of a field of clover and timothy was selected—from this about one-sixth of an acre, 26.16 rods were carefully measured, and on the 6th of April last, *one half* of the grass was evenly sprinkled by hand, with ten gallons ammoniacal liquor from the Philadelphia gas works, diluted with four times the quantity of water, being about the rate of one hundred and twenty-four gallons of gas liquor, or six hundred and twenty gallons of the diluted liquid to the acre. The season was propitious, and the ground favourable to the action of ammoniacal manures, being sufficiently light, with a fine natural drainage, and having grown Indian corn and wheat since manuring. During the season there was no perceptible difference between the two portions. In the latter part of June they were cut, dried, and weighed separately, though at the same time; that which was unliquored, gave 450 lbs.; liquored, 448 lbs. The difference, two pounds, may be safely set down to errors in collecting and weighing, when we have the result of neither benefit nor injury from the liquor.

On the 18th of April a similar experiment was performed on the farm of Mr. John Palmer, adjoining the above, except that the liquor was permitted to flow from a hogshead set on a cart, over a board placed for the purpose somewhat in the manner of the Flemings. Twelve and a half gallons were diluted as before, and distributed over nineteen and nine-twenty-fifths rods—not quite one-eighth of an acre. No difference was perceived between the sprinkled and unsprinkled grass, either during the season, or while mowing or cocking; the workmen therefore thought themselves justified during the absence of the writer, in saving the trouble of weighing, by carting it into the barn. The opinion that the efficacy of dung depends mainly on the phosphates it contains, derives support from the above facts.

Alfred L. Kennedy.

Philadelphia, Feb., 1845.

Cultivation of Fruit.

Soil.—The hard gravelly soil of the eastern States, the sandy soil of NewJersey, the clay soil of Pennsylvania, and the rich alluvial bottoms of the west, all produce an abundance of the different varieties of fruit when proper attention is given to the trees. Mr. Phinney, of Lexington, Massachusetts, has ditched and drained one of his swamps, and has now on it a luxuriant orchard of

apple-trees. *The great point is to have a dry soil.* If it is not sufficiently rich, make it so; no man should *expect* to have *fine* crops of anything unless his soil is rich.

Setting out trees.—If by exposure the roots have become dry, immerse them in water for twenty or thirty hours previously to setting them out. Prepare a compost as follows: take three bushels of rich soil, or three bushels of swamp muck would be better, one bushel night soil, one bushel fine charcoal—if charcoal is plenty three to four bushels is to be preferred—one bushel slaked lime, one bushel of unleached, or two bushels of leached wood ashes, and one peck of salt. Mix the above well together.

Dig the holes three feet across and two feet deep, keeping the top soil by itself, fill in a portion of the bottom soil until nearly ready for the tree, then fill in half a bushel of the compost and set in the tree, spreading out the roots to their natural position, and fill in the top soil, gently shaking the tree two or three times to settle the soil around the roots. The tree should be set the same depth in the orchard, that it stood in the nursery. Leave the soil a little hollowing about the tree to catch and retain the rain-water. Put around each tree half a peck of fine charcoal, and half a peck of slaked lime. With these precautions, neither peach nor any other fruit-trees will be infested with worms at the roots, provided they have suitable after-culture. For many of the above suggestions the writer is indebted to R. L. Pell, Esq., of Pelham, Ulster county, New York.

Culture of Orchards.—The soil around the trees should be kept loose, either by spading, digging with a mattock, or by ploughing. If a crop is put in the orchard, nothing should be planted or sowed within five feet of the trees, as the nourishment taken up by the crop is so much taken from the growth of the trees. After the lime and charcoal have laid around the trees one year, spread them around the trees in a circle of ten feet in diameter. This should be done in the spring, when the soil is cultivated, and a fresh supply of lime and charcoal applied.

When the trees have been set out three or four years, the soil should be enriched with a compost of manure, swamp-muck and ashes. Early every spring the trunks of the trees should be washed with strong ley, strong soap-suds, or thin soft-soap. Apply either of these with a whitewash brush as high as a man can reach. When the trees grow rapidly, their growth will be increased by slitting the outer bark the whole length from the ground up to the limbs. This gives the trees room to expand. As soon as the trees blossom, throw over them lime perfectly slaked—this should be done while the dew is on.

To render old and barren orchards thrifty and productive.—Early in the spring plough the entire orchard and enrich with a compost of manure, swamp-muck, lime, and chip manure. Scrape off all the old bark with a deck scraper, or a hoe, ground sharp. Apply half a bushel slaked lime, and the same of fine charcoal, around each tree. Apply then soft soap or strong soap-suds on the trunks and limbs as high as a man can reach. While the trees are in full bloom, throw over them a good supply of fine slaked lime.

B. G. Boswell.

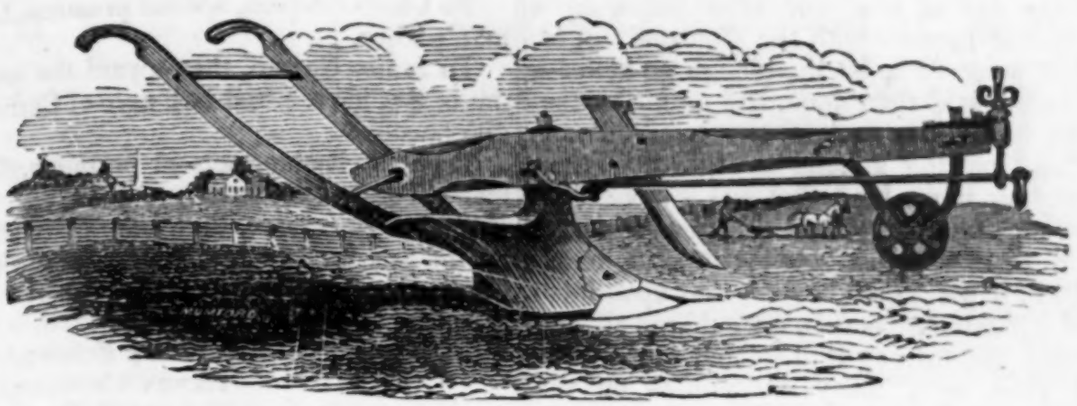
Philadelphia.

Seed Wheat.

We are told, that, in the island of Jersey, England, where the farmers sell their *produce* and live upon the *refuse*, it is customary for them to tie their wheat in small sheaves, and by striking each twice or thrice across a barrel while lying on its side on the floor, a superfine sample of wheat is obtained for market, after which the sheaves are thrown by, to be clean threshed in the evening of winter by lamp light.

I have just met with the account of a farmer in Vermont, to whom his neighbours resorted for the purpose of securing seed wheat of superior quality; very fine in appearance, remarkably productive, and of early maturity; he readily commanded three dollars per bushel, when the price of wheat was a dollar and a quarter, calling it the red and genuine *Barrel wheat*. But the secret was at last discovered; he used, before threshing his wheat, to select the best sheaves, and striking them over the side of the empty barrel as it lay on the floor, three or four times, before laying them down to be clean threshed, he obtained in this very simple way a very superior seed wheat, which the whole county coveted at a double price. Thus the largest and ripest kernels were separated and collected without labour or difficulty, and a profitable business was carried on, until his neighbours discovered how to make "Barrel wheat" for themselves.—*Boston Cultivator.*

"On the banks of the Elbe, in Holland, in the neighbourhood of Arnheim, the meadows are depastured during one year, and cut, and their produce made into hay the following year, and so on alternately. The cattle are fed in the house with the hay during the winter."



Communicated for the Farmers' Cabinet.

The Prouty & Mears' Boston Centre-Draught Plough, in Ohio.

Messrs. Prouty & Co.,—I did not receive the plough you sent me until the last week in November. Happening then to go to town with my wagon on a market day, I found it at the warehouse of Mr. Kirk, to whose care it had been forwarded by Mr. Smith, of Cincinnati, where it had arrived a day or two before, attracting very great attention from numerous farmers who had examined it, and by whom it had been much admired. When I had got it in my wagon and into the street, I soon had a crowd around it from three to four deep, and as many as could stand upon it, being literally blocked up for a considerable time, by farmers who were desirous of seeing "The Boston Centre-draught Prouty & Mears' Plough," two seeming to come for one that left; but night coming on, I was obliged to leave.

The land being in tolerable order, on the monday following many of the neighbours collected to see the plough tried. We took it into the field together with one that drew a premium at our Fair, made by Mr. Peacock, of Cincinnati, who had left it with me for the purpose, and which, when tried by the Dynamometer, was the lightest running plough at the Fair, turning as neat a furrow as any, but not so wide, on which account it took the second premium only, although many considered it entitled to the first. The trial commenced, by backing up three rounds, about 50 rods in length, with the Peacock plough; land, a stiff clover sod three years old, interspersed with patches of very tough blue grass; the soil varying from very stiff clay to black loam; the surface rolling, and often very sideling. The rounds being long and soil stiff, we were not surprised to find the horses sweat considerably. We then hitched to the Prouty Centre-draught, and backed five rounds to these three, when it was observed by all present, that by the time the team had gone a single round they began to cool, and before the five rounds were finished they had become perfectly cool, evidently walking off with great ease to themselves, although carrying a furrow an inch deeper and two inches wider than that taken by the Peacock plough.

We next backed up three rounds in another place with the Centre-draught, and then turned four rounds with the Peacock plough, when, as soon as we started, the horses began to labour, and by the time the rounds were finished, they were in a sweat again. And although we had no Dynamometer to ascertain the precise difference between the draught of the two ploughs, it was very evident to all that it was greatly in favour of the Boston Centre-draught. Mr. Peacock has the reputation of being one of the best plough makers in the State, and this plough was considered a first-rate article, yet when we came to compare the work performed, the difference between them was greater than in their draught, the Peacock plough edging the furrows, laying them uneven and considerably broken, leaving the clover tops visible through nearly all the work, while the Prouty plough inverted the sod so completely, that you could not have told, and would have had to guess what crop had grown there, unless the clover roots had led you into the secret; the soil at the same time being left quite mellow, and in fine order for harrowing.

I have ploughed five acres of similar land since, and like my plough better and better. The work, examined by many first-rate farmers, has been pronounced by all, superior to every thing they had before seen. I have also tried it in stubble land, and find it to work admirably. I measured thirty-one furrows in the sod ground, and found them to average thirteen inches wide, with an uniform depth of seven inches. The wheel works to perfection, and is convenient on many more accounts, than regulating the depth of the furrows. I forgot to say,

on the day of trial and after following a couple of furrows with the Centre-draught, it was proposed to let the plough go alone—no sooner said than done, and to our amazement it ran a round of one hundred rods without putting a hand to it, farther than steadying it on land that was a good deal sideling; turning a much neater furrow by itself than with an indifferent ploughman. Indeed, it was agreed by all, that upon level land without obstruction, it would run all day, by only just turning it in and out at the ends.

I have seen many encomiums on the ploughs of Barnaby & Moer, Ruggles & Mason, &c., but if they can go ahead of the Boston Prouty & Mears' Centre-draught, they deserve the thanks of every farmer and every farmer's horse in the community. An iron merchant of this town has engaged to bring on a number of ploughs from your establishment in Philadelphia, in the spring, as a great many farmers are anxious to obtain them; I hope we shall be furnished in time for spring cultivation. The blacksmiths do not encourage them, as they will lose their work of sharpening and new laying the shares, as in other ploughs, but when they become known, farmers will, I am confident, send one hundred miles to obtain them, rather than purchase those now in use about us. The entire satisfaction which my plough has given me, and the universal admiration that she has excited, have induced me, as in duty bound, to give you the above information; and in conclusion, I wish you to consider me, your much obliged friend, Stephen Widney.

Piqua, O., Jan. 28th, 1845.

Report on Crops.

At a meeting of the Philadelphia Society for promoting Agriculture, held at their rooms, March 5th, 1845: The Committee on Crops beg leave to report, that they have carefully examined all crops submitted to them, and award the premiums as follows:

To Mr. James Gowen they award the premium of $8, for the best three acres of Rye.

To Samuel S. Richie, second premium of Coleman's Agricultural Tour.

To Henry Chorley they award the premium of $8, for the best three acres of Oats.

To John Hunter, second premium of Coleman's Tour.

To James Gowen they award the premium of $8, for the best acre of Sugar Beats—972 bushels.

To H. Williams they award the premium of $8, for the best acre of Ruta Baga—790 bushels.

To Caleb Cresson, second premium, Coleman's Tour.

To James Gowen, they award the premium of $8, for the best half acre of Carrots—495 bushels.

To S. S. Richie, second premium, Coleman's Tour.

To James Gowen, they award the premium of $8, for the best half acre of Sugar Parsneps, at the rate of 700 bushels per acre.

George Blight,
Henry Chorley,
Samuel S. Richie,
Cornelius S. Smith.

Philadelphia, March 4th, 1845.

It may be allowed us to remark, that in the foregoing Report, there is a manifest deficiency, which cannot fail to strike every one. Premiums are in several cases rendered for the *best crops*, without designating the amount of those crops. This cannot be satisfactory: where premiums are awarded, it is desirable to know, that they are for really heavy crops, and not merely for the *best* of a set of wretched ones. The extra trouble should not deter farmers from the free use of the half bushel.—Ed.

Philadelphia Agricultural Society.

To the Committee on Crops:—

Gentlemen,—As the year is drawing to a close, I take leave to pay my usual respects on the occasion, by way of showing what I have been doing in the department under your supervision since you last heard from me, and of claiming your attention to some of the following crops, in hopes they may be found worthy of distinction.

You are all aware, that in consequence of keeping so large a stock of cattle, my farm is principally under grass, and that I raise but little grain. If premiums had been offered for the best fields of grass, I should have competed successfully, I think, with thirty acres of Timothy. The early grasses, clover, and orchard, were not so good, I housed however, some one hundred and twenty to thirty tons, first crop hay.

Of Corn, I had but seven acres, the yield very good in view of the impoverished state of the land, it being two small lots adjoining some land of mine which from its condition for years, was a standing reproach to the neighbourhood. It came into my possession last spring, and I had barely time to plough and seed it.

I had no wheat, except two acres of spring wheat, the seed of which was presented to me by Mr. Butman, of Dixmont, Maine. It ripened well—is not yet threshed; I cannot therefore report the precise yield, nor its quality as to flour.

Of Rye, I had eight acres, in with orchard

grass and clover. The field had been under grass the three previous years. Your Committee saw the crop while growing, and in sheaf. It was a beautiful field of Rye, the style of culture was such as gratified every practised eye. Nothing I think, in stubble, can exceed the setting of the young grass and clover, which I think will prove an object of attraction to the farmer, next summer.

Of roots, I had four acres of Mercer Potatoes, planted between the 18th and 26th of April, in drills. Manure, barn yard: yield over two hundred bushels to the acre. Quality, very good.

Carrots, over half an acre in drills, twenty inches apart, sowed last week in April. Manure, a dressing of well rotted barnyard, with one application of liquid manure. The patch was 260 feet long, 100 feet wide, equal to two roods and 15 perches. The yield 588 bushels, averaging 990 bushels to the acre.

Sugar Parsneps about half an acre, in drills, sowed first week in May. Manured and treated the same as the carrots: crop still in the ground: I compute the yield at seven hundred bushels to the acre.

Sugar Beets, over one acre, in drills, sowed from 15th to 18th May. Drills two feet six inches apart; manured same as the carrots and parsneps; yield nine hundred and seventy-two bushels of sixty lbs. each, to the acre.

Turnips, three acres and a half, sowed on the 8th August, broad cast, with timothy seed, yield computed at 2500 bushels. The turnips were uniformly large, and the grass is well set,

For years I have urged upon our farmers in this neighbourhood, the necessity of turning their attention to root crops, and have for the same period demonstrated their utility by practical results. The present is but another proof, with the many I have heretofore furnished, of the utility of this culture, especially, in view of the high and increasing value of land in the vicinity of the city, and where the keeping of large stocks of dairy cattle is so indispensable. It is a reproach, indeed a serious affliction, that so much of the milk served to the city is produced from such feed as is procured at the distilleries and breweries; such trash is unnatural to the habits and functions of cattle. Cattle thus fed, become diseased, their secretions are impure, of which the citizens are not aware, and seldom inspect, or inquire into the state of the dairy, whence they obtain their supplies—they but too generally think of the *price* of the milk, without reference to quality. Milk with them is milk, if it be not a shade darker than blue, and thus through carelessness or ill-directed economy, they may be found administering to their children daily, a vitiated fluid, strongly impregnated with deleterious matters, that cannot fail to exert a pernicious influence on the health and dispositions of their offspring. This subject is worthy the special attention of our Society. I shall however revert to it again on some more fitting occasion, the subject being important to the interests of the farmer as well as to the health of our fellow citizens, who depend upon us for so large a portion of the necessaries of life. It is true, we have accomplished much, as our crops, our cattle, and our markets abundantly prove. But the inhumanity in the treatment of cattle, and the quality of some of the milk, served to the cities, present strong claims to the justice and intelligence of our Society. Let any one compare a cup of milk taken from a cow fed in the winter on her natural food—well cured grass, and well matured roots, such as sugar beets, turnips, sugar parsneps, &c., and compare it with that taken from an animal, whose secretions are excited by the fermented and filthy slops of a distillery or brew house, and he will find as much difference as there is between a bad cider, and a pure and generous wine.

In the spirit of improvement, and kindness, I would invite those who feed from the distilleries and breweries to look at this statement, and calculate, whether it would not be even cheaper to cultivate two or three acres of roots for winter feed, than to waste time and money upon that, which inevitably must impair the constitution and health of their cattle.

From 1	acre of	Sugar Beets,	I have 972	bus.
" ½	"	Sugar Parsneps,	350	"
" ½	"	Carrots,	495	"
" 3½	"	Turnips,	2500	"

Making 4317 bushels, allowing 60 lbs. to the bushel. In round numbers, one hundred and fifteen tons of wholesome juicy food, from five and a half acres of land.

Respectfully,

JAMES GOWEN.

Mount Airy, 20th Dec., 1844.

Letter from T. le Couteur.

There is so beautiful and philanthropic a spirit, running through the following letter from a well known wheat grower in the Island of Jersey, that we solicited the privilege from Dr. Elwyn of making copious extracts from it; believing that the readers of the Cabinet, will be no less pleased with them than was the Editor.—ED.

Belle Vue, Jersey, 30th October, 1844.

SIR,—

I have the honour to acknowledge the receipt of your letter of the 19th July last, to-

gether with a certificate of my election as an honorary member of the Philadelphia Agricultural Society.

I beg that you will do me the honour to express to the President and members of your Society, at its next meeting, that I greatly appreciate this mark of distinction.

I have now laboured a quarter of a century, in the constant view, to benefit mankind generally—thus, any mark of approbation coming from a point so distant, is doubly gratifying, and marks that humble, though persevering labours, are not always unnoticed.

As you state that packets of any size can reach you duty free, I enclose a few grains of new, or excellent varieties of Wheat, which, if entrusted to some careful farmer, may prove useful.*

You will pardon me for adding that, my early career in life was in the war with the United States, on the Niagara frontier. It always distressed me to hear, my own language was that of my opponents, for I felt it to be a sort of civil war! How unhappy is it, that nations springing from a common source, should not rather seek to benefit each other by the friendly relations of commerce, than by seeking to injure each other by war.

It affords me infinitely more pleasure to fancy that any grain I may send you, may become the source of wide spreading fields of golden produce, harvested by hardy husbandmen, than to contemplate any victory, with its train of devastation and rapine.

I am convinced that the dissemination of those admirable bodies, Agricultural Societies throughout your noble country, will tend there, as in Europe, to this happy result—the husbandman is averse to war, he loves industry and peace. In England and France, the whole body of husbandmen dread war, they are the last to desire it; unquiet spirits with hazardous professions, alone seek it. May it never be again waged by nations springing from one root! I shall be happy at any time, to send you seeds of any new grain, if you will let me know the proper period.

I have the honour to be Sir, your very faithful and obliged,

T. le Couteur, F. R. S.,
A Governor of the Royal Agricultural Society of England.

Alfred Langdon Elwyn, Esq.
Cor. Sec. Philad'a Ag. Soc.

* It may be stated, that these splendid samples of Wheat, were placed by the Society in the hands of James Gowen, of Mount Airy, who will, doubtless, take all proper care of them.—Ed.

Guano.—The Guano trade still forms a prominent branch of commerce. It employs a large amount of shipping; and, as the article is getting scarce, the price has risen considerably. A great deal of business has been recently done on speculation; and the rage for investment for this new description of manure is increasing daily.

The consumption last season of Peruvian and African guano was 60,000 tons. The stock on hand at the beginning of the present year was 39,000 tons. The demand, it is expected, will this year exceed 160,000 or 200,000 tons.—*English paper.*

Bees.—Dr. Waterman gives in the Cleaveland Herald, his mode of catching the bee-miller or moth. He says, "I took two white dishes, (I think white attracts their attention in the night,) or deep plates, and placed them on the top of the hives, and filled them about full of sweetened vinegar. The next morning I had about fifty millers caught; the second night I caught fifty more; the third night being cold, I did not get any; the fourth night being very warm, I caught about four hundred.

Hogs at Cincinnati.—The Cincinnati Gazette says:—"We are indebted to Mr. Clearwater, for the following statement of the number of hogs slaughtered in Cincinnati and Covington the past season. Instead of giving the names of the several slaughtering houses, we number them as we did last season.

No. 1,	36,715	head.
" 2,	29,456	"
" 3,	28,228	"
" 4,	23,612	"
" 5,	16,089	"
" 6,	12,838	"
" 7,	11,906	"
" 8, (at Covington,)	12,384	"
	171,228	head.

We shall know in a few days the number of slaughtered hogs received this season by wagon and river. We suppose it to be only about 15,000—which would make the entire number packed here this season, 186,228 head. Last season, the entire number packed here was 240,000 head."

Rats.—Last week, as Mr. Arnold, farmer, of this place, was taking in a small Wheat rick, he found about the middle of it a nest of young rats, containing twenty-nine, all about the size of mice. The old one was seen, but made her escape, unluckily for the owner, she being so good a breeder.—*English paper.*

For the Farmers' Cabinet.

Lightning Rods,—No. 1.

My attention was recently turned to the subject announced in the caption to this article, by reading two papers in the current volume of the Cabinet, one signed J. M. P.,* the other from the pen of Professor Olmsted.†

If I am not mistaken in the person of our old friend *Observer*, deep family affliction and more engrossing cares have for a long time withdrawn him from the pages of his favourite Cabinet. Perhaps *I* may therefore be excused for offering a few remarks on the subject of Lightning Rods, which might more appropriately come—and in a more instructive form too—from *his* pen. I acknowledge myself much indebted to his valuable papers, and as the suggestion of a correspondent (vol. 5, page 228,) in favour of republishing those papers, did not meet with a favourable response from the then editor, I shall make free use of the materials which are there to be found.

J. M. P. says,—and perhaps truly—"it must be manifest that there exists a culpable ignorance on the part of the community in relation to this whole subject." To me this ignorance is more lamentable than culpable—more a cause of regret than of surprize. How shall the *people* be otherwise than ignorant, when it is "manifest" that the *priests*—those who undertake to teach knowledge—too often themselves, betray something a *little* worse than ignorance—error—and error is always worse than ignorance. For *ignorance* merely implies a want of the knowledge of the *true*, and *may* lead to the *omission* of what is *right*—but *error* is the adoption of the *false*, and *must* lead to the *commission* of what is *wrong*. Indeed such are the discrepancies between writers on lightning rods, as frequently to suggest the sarcastic query—*who* shall decide when doctors disagree?

I can hardly hope to be more fortunate than those who have preceded me—or to be able wholly to extricate my readers from the bewildering labyrinth of error and incertitude into which they have been unfortunately led. Indeed I know that some of my views are opposed by high authorities; but I do not hold my opinions subject to their *dictum*.

The object of these papers is:—

First, To lay down a few relevant principles of electrical science, and to illustrate them as fully as my means will admit.

Second, To draw from these principles certain inferential rules for the construction of lightning rods, which will be intelligible to common readers. It is too much to ask the implicit confidence of any one, in facts which he cannot comprehend—and the *whys* and *wherefores* of which he does not understand.

1. Electricity is a universally diffused principle—a variable quantity of it pervades all material bodies. This is called their *natural quantity of electricity*.

2. Some bodies—as the metals, water, and moist substances generally—possess the property of allowing electricity to pass freely through them, and are thence called *conductors of electricity*.

3. Another class of bodies—as glass, wax, resin, silk, atmospheric air, earth, and wood when perfectly dry—do not allow electricity to pass through them, and are therefore called *non-conductors of electricity*.

4. The particles of the electric fluid have a strong mutual repulsion for each other, which causes them to disperse with a force which decreases as the squares of their distances increase. This is called *electrical repulsion*.

5. The same particles strongly attract, and are attracted by other bodies, and thus attach themselves to them. This is called *electrical attraction*.

6. When the repelling and attracting forces are unequal, the fluid will be put in motion in the direction of the stronger force This is called the *electrical current*.

7. When the two forces are equal, the fluid will remain at rest. This is called *electrical equilibrium*.

8. Electrical phenomena can only be produced by interposing some *nonconductor*, so as to intercept the *electrical current*, and cause the fluid to collect in more than its *natural quantity*. If all bodies were good *conductors* of electricity, it would soon find an equilibrium, and forever remain in a quiescent state without being in any way cognizable to our senses. It is only when this equilibrium is disturbed by means of *nonconductors*, that we can recognize its existence. This is called the *accumulation of electricity*.

9. When two substances are rubbed together—one or both of which are *nonconductors*—as the glass and cushion of an electrical machine, the *natural electricity* of both will be disturbed, and they will exhibit electrical phenomena. This is called *electrical excitement*.

10. When by means of the electrical machine we give to a body more than its *natural quantity* of electricity, it is called the *electrical charge*, and the body is said to be *electrified*, or *charged*.

* Number 2, page 61. † Number 3, page 97.

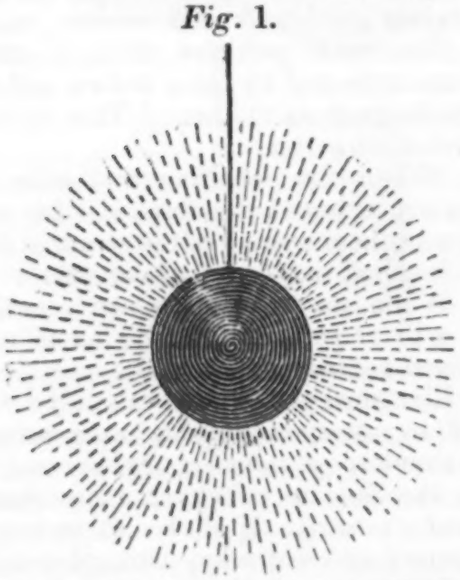
11. In order to *charge* a body with the electric fluid, it must first be suspended or supported by some *nonconducting* material to prevent it from escaping. The body is then said to be *insulated.*

12. Though both the glass and cushion (9) show electrical phenomena, yet there is a striking difference in their character. Some believe that the electricity of the cushion is transferred to and *accumulated* on the glass; the latter having *more* and the former *less* than its natural quantity; hence that of the glass has been called *plus*, or *positive*, and that of the cushion *minus*, or *negative electricity.*

13. Others suppose that there are *two* electric fluids which are ordinarily combined, but that they are separated by the friction—one accumulating on the cushion and the other on the glass. Having observed that glass affords one and resin the other, when friction is employed, they have called the one *vitreous*, and the other *resinous electricity.*

14. If we *insulate* the brass ball, fig. 1,

Fig. 1.



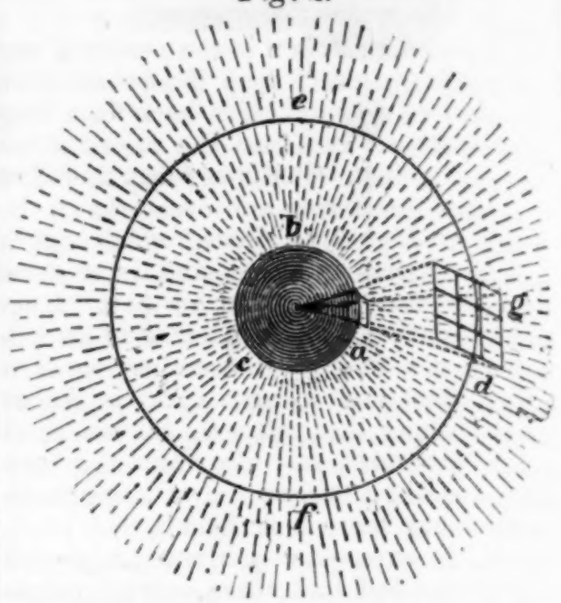
by means of a *nonconducting* silk thread, and then *charge* it with electricity—the particles of the fluid will be dispersed by their own repulsive power, while the attraction of the ball will solicit them towards its surface, until an *equilibrium* is obtained between the two forces. The electricity will then have arranged itself around the ball as seen in the figure. This is called an *electrical atmosphere.*

15. The attraction of the ball decreases as the squares of the distances from its centre increase—consequently the condensation of the fluid will be greatest at the surface, and will decrease in the same ratio with the attracting force. This is called the *intensity of the charge.*

16. The attracting force, and consequently the *intensity* of the *charge* which a ball is capable of receiving, is in proportion to its *density* or the quantity of matter contained in a given space. A ball of lead will hold a more intense charge than a ball of cork.

17. Let *a*, *b*, *c*, and *d*, *e*, *f*, fig. 2, repre-

Fig. 2.



sent two balls, the half diameters of which are as the numbers 1 and 3, but composed of different materials, so that they shall contain like quantities of matter—then from the known laws of attraction, the attracting force on the surface of *a*, *b*, *c*, will be nine times greater than on the surface of *d*, *e*, *f*,; or in other words, the same force will be diffused over nine times the space on the latter, that it was on the former as is seen at *g*. Hence if we form an *electrical atmosphere* around the lesser body, *a*, *b*, *c*, and then describe the circle *d*, *e*, *f*, to represent the larger body, the circle so drawn will cut off just so much of the electricity as the larger ball would be capable of holding.

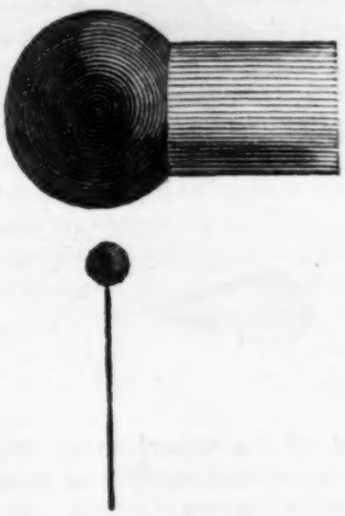
18. If we increase the intensity of the *charge* until the repelling, becomes greater than the attracting force, the fluid will diffuse itself through the surrounding air, or will fly off to some contiguous body with an explosion and luminous spark. The former is called *electrical dispersion*—the latter, the *electrical stroke.*

19. The facility with which the *dispersion* or *stroke* takes place, depends, in a great degree, upon the state of the atmosphere and the form of the electrified body; and the *intensity* of the *charge* will be influenced by the same circumstances to the same extent. The space through which the discharge passes, is called the *striking distance.*

20. If a metallic ball be presented to an

electrified body, as seen in fig. 3, it will re-

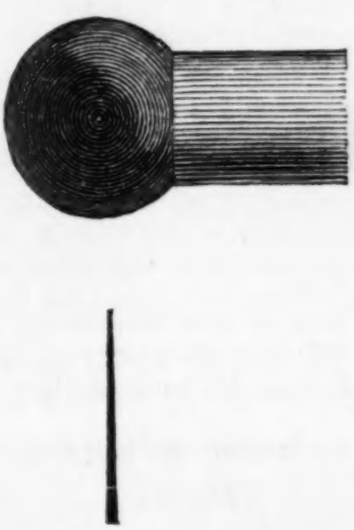
Fig. 3.



ceive a spark when brought within striking distance, accompanied by an explosion; and the body so approached, will be found to have parted with its electricity. This is called the *explosive discharge.*

21. But if a pointed wire be presented in like manner as shown in fig. 4, no spark

Fig. 4.



or explosion will ensue, but the *charge* will be removed even more completely than in the former case, before it has been brought within several times the *striking distance* of the body. This is called the *silent discharge.*

22. Again, if both the ball and point be presented at once, as seen in fig. 5, only with the latter at three or four times the distance of the former—still the *discharge* will take place *silently*, and the ball will not receive a spark.

23. If, however, the point be presented along side of, and close to a larger obtuse body, without actual contact, as seen in

Fig. 5.

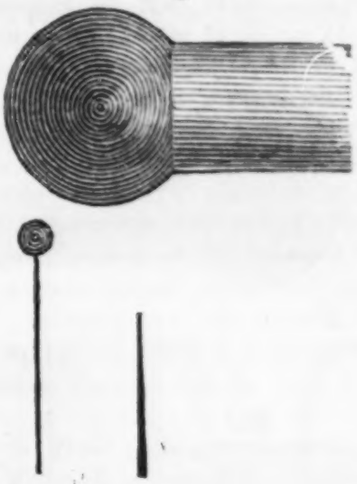
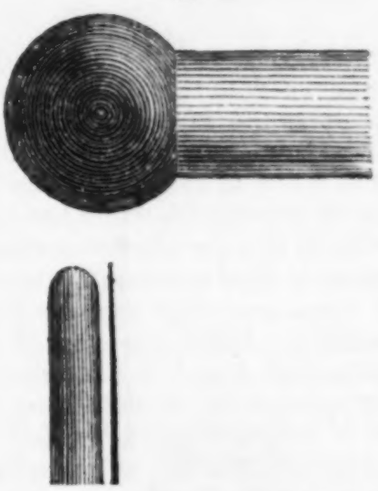


fig. 6, it will be found that the discharging

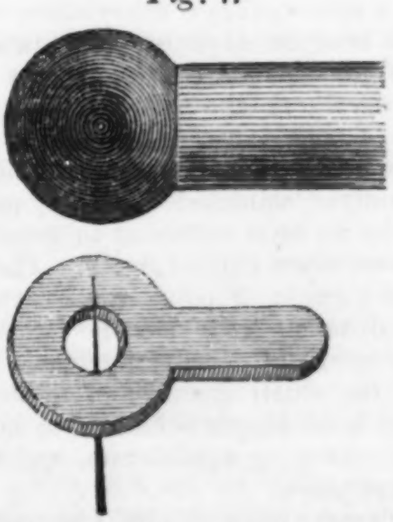
Fig. 6.



power of the point is greatly diminished, if not entirely destroyed.

24. The same effect will be still better observed, if the point be passed through a broad moveable ring, as seen in fig. 7. The

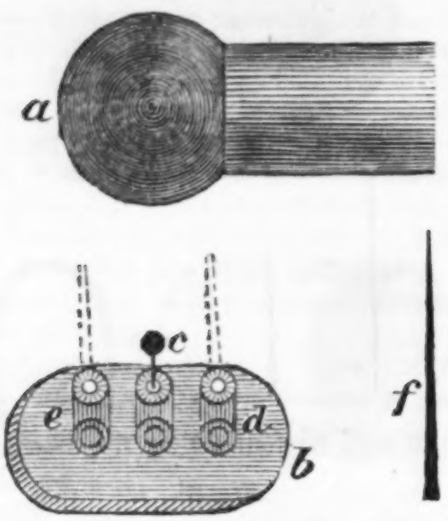
Fig. 7.



discharging power of the rod will increase or diminish, as the ring is made to recede from, or approach the point.

25. A rod which is *insulated*, will not effect an electrified body. Let *a*, fig. 8, be

Fig. 8.

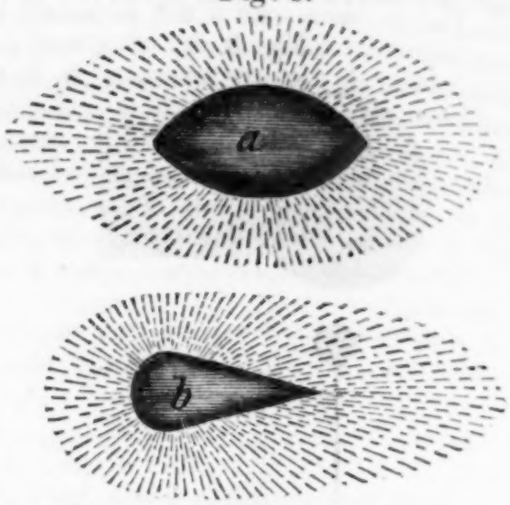


an electrified body, and the charge kept up by its connexion with the electrical machine. Under *a*, upon the table, place the instrument *b*, which is a small board holding two short glass tubes at *d*, and *e*. The tube *d*, is open at its lower end, while the one at *e*, is hermetically closed. Between them, at *c*, is another glass tube surmounted by a brass ball, and communicating through the tube with the table. Place the pointed wire *f*, in the open tube *d*, and it will silently discharge *a;* remove it to the closed tube *e*, by which it becomes *insulated*, and it will no longer do so. But as the intensity of the charge in *a*, increases, it first begins to pass *silently* to the point, until it has acquired sufficient explosive force to strike from the side of the wire in a horizontal direction to the ball at *c*. This I will call the lateral explosion.

26. The *electrical atmosphere* which forms around a sphere, (12) is everywhere equally diffused, because all parts of its surface are equi-distant from its centre, and its attraction everywhere the same. Bodies with angles or points, have those parts farther from the centre, and the electric fluid being less strongly attracted at those parts, is driven by its own repulsion to greater distances—as shown at *a*, fig. 9. The more acute the angle or point, the greater will be the distance to which the atmosphere will extend, as at *b*, until the feeble attraction of the small quantity of matter near the point is no longer sufficient to hold the repulsive force in equilibrium, and *dispersion* takes place.

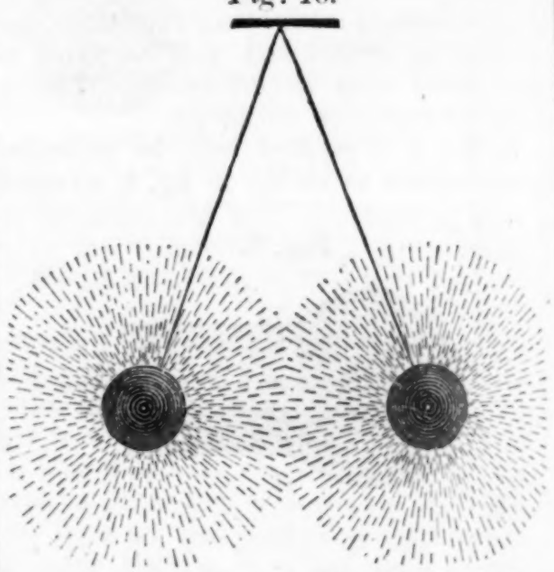
27. If two or more pith-balls be suspended by silk threads and electrified, each one respectively will acquire an *electrical atmosphere*, and the electricity of the one will

Fig. 9.



repel that of the other, so as to separate them to twice the extent of their atmospheres, as is shown fig. 10. But if the

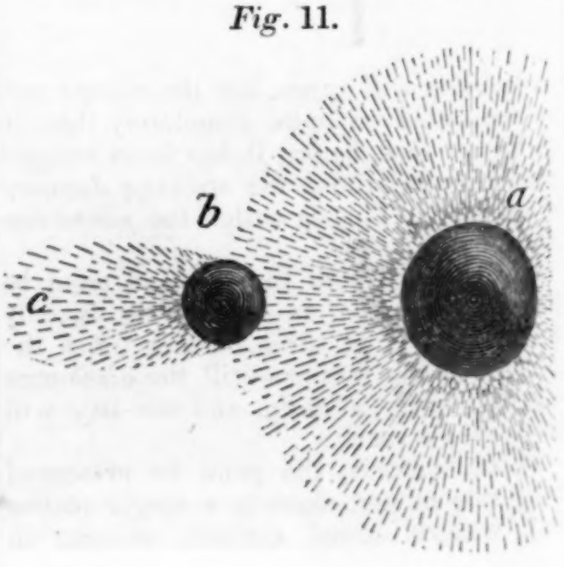
Fig. 10.



finger be brought near them they will fly to it,—give off their electricity in form of a spark, and then fall back to their original position.

28. If we *insulate* the ball *b*, fig. 11, and

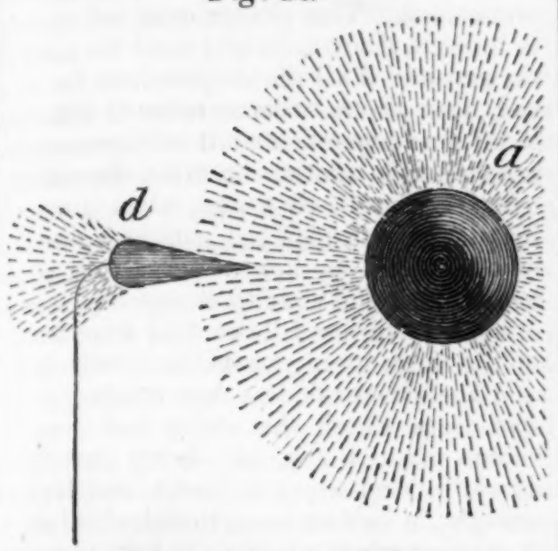
Fig. 11.



cause it to approach the electrified ball *a*., so as just to come within the influence of its atmosphere, the electricity of *a*, will repel the *natural quantity* possessed by *b*, to the opposite side, where it will form a local atmosphere, *c*. If the finger be approached to this part, a spark will be received without diminishing the *charge* of *a*., but on removing *b*, it will be found negatively charged, and will more readily receive a spark from *a*, than before.

29. If instead of the ball we now present a pointed body, *d*, fig. 12, the same thing

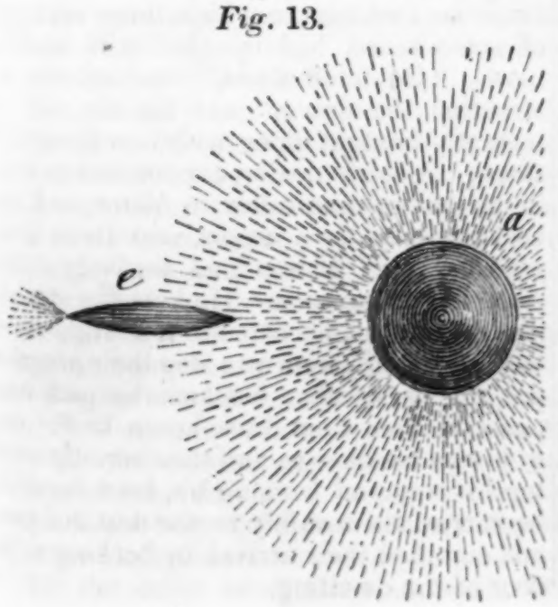
Fig. 12.



will take place. But the point immediately receives more electricity from *a*,—another spark is given, and another, and another, until *a*, is completely discharged. But if instead of applying the finger to *d*, we attach a conducting wire *e*, to it, so as to communicate with the earth, we have all the conditions mentioned (21) and *a*, is *silently discharged*.

30. Instead of the point *d*, we may next substitute a double point, as *e*, fig. 13, and

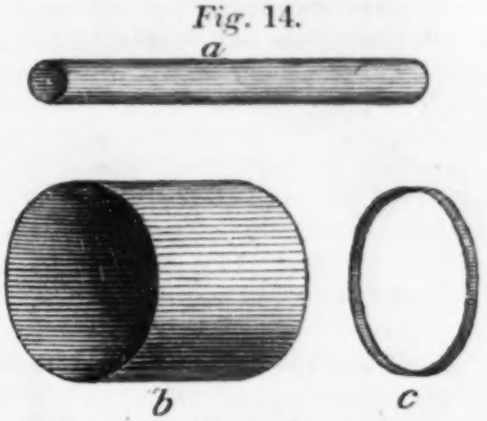
Fig. 13.



it will discharge *a*, without the intervention of a conducting rod. The nearest point will receive the fluid from *a*, (21) and the more distant one will disperse it, (26.)

31. If we *insulate* and *electrify* a thin, narrow, metallic tube, *a*, fig. 14, it will be

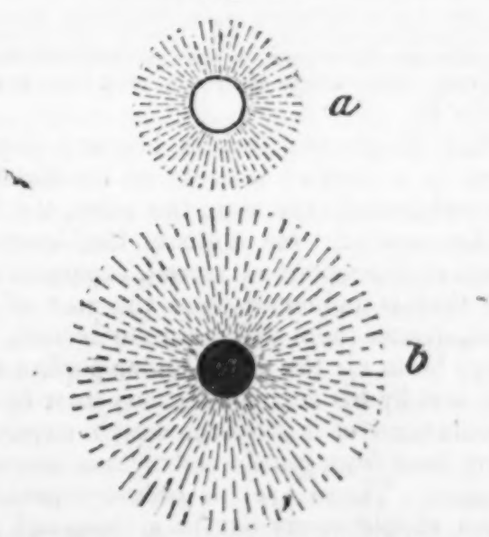
Fig. 14.



found that the *charge* does not enter the tube, but occupies the outside only. This is owing to the mutual repulsion of the portions of the fluid on opposing sides of the instrument. As the tube is increased in width proportioned to its length, as at *b*, a portion of the charge will enter upon its inner surface, and still more as it approaches nearer to the form of a ring, *c*.

32. As the quantity and intensity of the *charge* which any body is capable of receiving—other circumstances equal—are in proportion to the quantity of matter which it contains, (16); Hence if *a*, and *b*, fig. 15,

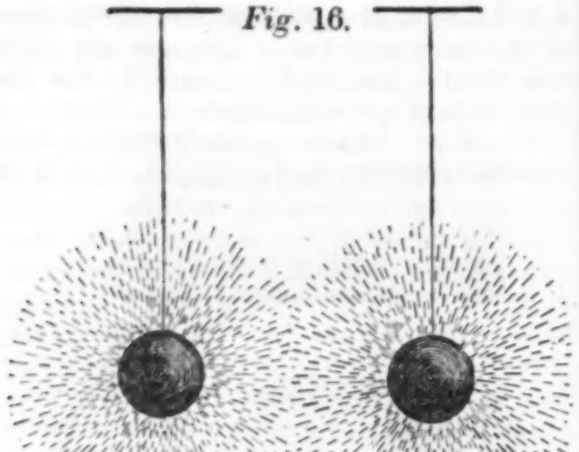
Fig. 15.



represent cross sections of two charged bodies, one tubular and the other solid, it must be evident that the latter will hold a charge of many times greater *intensity* than the former.

33. Take two similar balls, fig. 16, and electrify them, one positively and the other negatively. Each one alone will present electrical phenomena, but when brought near together, their *atmospheres* will sud-

Fig. 16.



denly coalesce, the balls will rush together with an *explosion*, and all signs of *excitement* will have disappeared. The two charges have completely neutralized each other; the excess of electricity in the one having supplied the deficiency in the other.

Observation.—The intelligent reader will perceive that I have proceeded on the supposition of a single electrical fluid—the *Franklinean theory*. Of course those who hold a different theory will be disposed to cavil at some parts of this essay. It will be for them to show that my statements are not in conformity with facts. Franklin.

First month 1st, 1845.

The Shepherd's Dog.

In the ninth No. of the last volume of the Cabinet, was given a beautiful cut of the Shepherd's Dog, with an interesting account of him from a correspondent. The following lively article we take from the Salem Register, Ohio, which credits it to a late English work.—Ed.

The Shepherd's Dog in his own department is a perfect miracle of intelligence. He understands the sign, the voice, the look of his master. He collects the scattered sheep at the slightest signal, separates any one that is indicated from the rest of the flock, drives them wherever he is told, and keeps them all the while under perfect control, less by his active exertions than by the modulations of his voice, which expresses every tone from gentle instruction to angry menace. These are his ordinary performances, visible every day in a thousand pastures. But he can do greater wonders. It chanced one night that seven hundred lambs, committed to the keeping of the Ettrick Shepherd, broke loose from his control and scampered away in three divisions over hill and plain. "Sirrah, my man," said Hogg mournfully to his *colly*, meaning it for an expression of grief, and not for a direction, "they're awa." Silently and without his master's knowledge, for it was too dark to see, the dog left his side, while the shepherd passed the hours till morning in a weary and fruitless search after his wandering charge. At the dawn of the day he was about to return home with a heart full of despair, when he caught a sight of Sirrah guarding at the bottom of a deep ravine, not, as he at first supposed, one division of the lambs, but the whole of the vast flock, without a solitary exception. "It was," says James Hogg, "the most extraordinary circumstance that had ever occurred in my pastoral life. How he had got all the divisions collected in the dark is beyond my comprehension. The charge was left entirely to himself, from midnight until the rising of the sun, and if all the shepherds in the forest had been there to have assisted him, they could not have effected it with greater propriety." On another occasion the same famous shepherd saw a dog, when it was utterly dark, put upon the path of a ewe that had been lost by her owner near a neighbour's farm, and which was supposed to have mingled with her fellows that were feeding in the surrounding pastures. "Chieftain," said the master of the dog, pointing to the spot from which the sheep had gone off, "fetch that, I say, sir—bring that back; away!" And away he went, and back he brought, in half an hour, the identical sheep. A sheep-stealer, who was at last discovered and hanged, used to carry on his trade by secretly signifying the particular sheep that he desired out of a large flock, as he viewed them under the pretence of purchasing, to his dog, who returning by himself, a distance of several miles at night, drove the selected sheep, which was undoubtedly the fattest, to his fastidious owner. Both Scott and Hogg relate this picturesque story more circumstantially from the annals of the Justiciary Court, in Scotland. Sir Thomas Wilde knew an instance in which three oxen out of some score, had mingled with another herd. "Go fetch them," was all the instruction the drover gave his dog, and he instantly brought along with him those very three. A cattle dealer, accustomed to drive his beasts for nine miles to Alston, in Cumberland, once for a wager, sent them alone with his dog. The animal perfectly understood his commission. He kept the straight road, ran when he came to a strange drove, to the head of his own to stop their progress, put the beasts that blocked the path upon one side, then went back again to the rear to hie on his charge, and thus adroitly steering his way and keeping his herd together, he carried them safely to the destined yard, and signified their arrival by barking at the door of the dwelling.

Animal Heat.

(Concluded from p. 228, last Number.)

In cold and temperate climates, the air, which incessantly strives to consume the body, urges man to laborious efforts in order to furnish the means of resistance to its action, while, in hot climates, the necessity of labour to provide food is far less urgent.

Our clothing is merely an equivalent for a certain amount of food. The more warmly we are clothed, the less urgent becomes the appetite for food, because the loss of heat by cooling, and consequently the amount of heat to be supplied by the food, is diminished.

If we were to go naked, like certain savage tribes, or if in hunting or fishing we were exposed to the same degree of cold as the Samoyedes, we should be able with ease to consume ten pounds of flesh, and perhaps a dozen of tallow candles into the bargain, daily, as warmly clad travellers have related with astonishment of these peeple. We should then also be able to take the same quantity of brandy or train oil without bad effects, because the carbon and hydrogen of these substances would only suffice to keep up the equilibrium between the external temperature and that of our bodies.

According to the preceding expositions, the quantity of food is regulated by the number of respirations, by the temperature of the air, and by the amount of heat given off to the surrounding medium.

No isolated fact, apparently opposed to this statement, can affect the truth of this natural law. Without temporary or permanent injury to health, the Neapolitan cannot take more carbon and hydrogen in the shape of food than he expires as carbonic acid and water; and the Esquimaux cannot expire more carbon and hydrogen than he takes into the system as food, unless in a state of disease or of starvation. Let us examine these states a little more closely.

The Englishman in Jamaica, perceives with regret, the disappearance of his appetite, previously a source of frequently recurring enjoyment; and he succeeds, by the use of cayenne pepper and the most powerful stimulants, in enabling himself to take as much food as he was accustomed to eat at home. But the whole of the carbon thus introduced into the system is not consumed; the temperature of the air is too high, and the oppressive heat does not allow him to increase the number of respirations by active exercise, and thus to proportion the waste to the amount of food taken; disease of some kind, therefore, ensues.

On the other hand, England sends her sick to southern regions, where the amount of the oxygen inspired is diminished in a very large proportion. Those whose diseased digestive organs have in a greater or less degree lost the power of bringing the food into the state best adapted for oxidation, and therefore are less able to resist the oxidizing influence of the atmosphere of their native climate, obtain a great improvement in health. The diseased organs of digestion have power to place the diminished amount of food in equilibrium with the inspired oxygen, in the mild climate; while in a colder region the organs of respiration themselves would have been consumed in furnishing the necessary resistance to the action of the atmospheric oxygen.

In our climate, hepatic diseases, or those arising from excess of carbon, prevail in summer; in winter, pulmonary diseases, or those arising from excess of oxygen, are more frequent.

The cooling of the body, by whatever cause it may be produced, increases the amount of food necessary. The mere exposure to the open air, in a carriage or on the deck of a ship, by increasing radiation and vaporization, increases the loss of heat, and compels us to eat more than usual. The same is true of those who are accustomed to drink large quantities of cold water, which is given off at the temperature of the body, 98.5 degrees. It increases the appetite, and persons of weak constitution find it necessary, by continued exercise, to supply to the system the oxygen required to restore the heat abstracted by the cold water. Loud and long continued speaking, the crying of infants, moist air, all exert a decided and appreciable influence on the amount of food which is taken.

We have assumed that it is especially carbon and hydrogen which, by combining with oxygen, serve to produce animal heat. In fact, observation proves that the hydrogen of the food plays a not less important part than the carbon.

The whole process of respiration appears most clearly developed, when we consider the state of a man, or other animal, totally deprived of food.

The first effect of starvation is the disappearance of fat, and this fat cannot be traced either in the urine or in the scanty fæces. Its carbon and hydrogen have been given off through the skin and lungs, in the form of oxidized products; it is obvious that they have served to support respiration.

In the case of a starving man, 32½ ounces of oxygen enter the system daily, and are given out again in combination with a part of his body. Currie mentions the case of

an individual who was unable to swallow, and whose body lost 100 lbs. in weight during a month; and, according to Martell, (Trans. Linn. Soc., vol. xi., p. 411,) a fat pig, overwhelmed in a slip of earth, lived 160 days without food, and was found to have diminished in weight, in that time, more than 120 lbs. The whole history of hybernating animals, and the well-established facts of the periodical accumulation, in various animals, of fat, which, at other periods, entirely disappears, prove that the oxygen, in the respiratory process, consumes, without exception, all such substances as are capable of entering into combination with it. It combines with whatever is presented to it; and the deficiency of hydrogen is the only reason why carbonic acid is the chief product; for, at the temperature of the body, the affinity of hydrogen for oxygen far surpasses that of carbon for the same element.

We know, in fact, that the graminivora expire a volume of carbonic acid equal to that of the oxygen inspired, while the carnivora, the only class of animals whose food contains fat, inspire more oxygen than is equal in volume to the carbonic acid expired. Exact experiments have shown, that in many cases only half the volume of oxygen is expired in the form of carbonic acid. These observations cannot be gainsaid, and are far more convincing than those arbitrary and artificially produced phenomena, sometimes called experiments; experiments which, made, as too often they are, without regard to the necessary and natural conditions, possess no value, and may be entirely dispensed with; especially when, as in the present case, nature affords the opportunity for observation, and when we make a rational use of that opportunity.

In the progress of starvation, however, it is not only the fat which disappears, but also, by degrees, all such of the solids as are capable of being dissolved. In the wasted bodies of those who have suffered starvation, the muscles are shrunk and unnaturally soft, and have lost their contractility; all those parts of the body which were capable of entering into the state of motion, have served to protect the remainder of the frame from the destructive influence of the atmosphere. Toward the end, the particles of the brain begin to undergo the process of oxidation, and delirium, mania, and death close the scene; that is to say, all resistance to the oxidizing power of the atmospheric oxygen ceases, and the chemical process of eremacausis, or decay, commences, in which every part of the body, the bones excepted, enters into combination with oxygen.

The time which is required to cause death by starvation, depends on the amount of fat in the body, on the degree of exercise, as in labour or exertion of any kind, on the temperature of the air, and, finally, on the presence or absence of water. Through the skin and lungs there escapes a certain quantity of water, and as the presence of water is essential to the continuance of the vital motions, its dissipation hastens death. Cases have occurred, in which a full supply of water being accessible to the sufferer, death has not occurred till after the lapse of twenty days. In one case, life was sustained in this way for the period of sixty days.

In all chronic diseases, death is produced by the same cause, namely, the chemical action of the atmosphere. When those substances are wanting, whose function in the organism is to support the process of respiration; when the diseased organs are incapable of performing their proper function of producing these substances; when they have lost the power of transforming the food into that shape in which it may, by entering into combination with the oxygen of the air, protect the system from its influence, then, the substance of the organs themselves, the fat of the body, the substance of the muscles, the nerves, and the brain, are unavoidably consumed. The true cause of death in these cases is the respiratory process, that is, the action of the atmosphere.

A deficiency of food, and a want of power to convert the food into a part of the organism, are both, equally, a want of resistance; and this is the negative cause of the cessation of the vital process. The flame is extinguished, because the oil is consumed; and it is the oxygen of the air which has consumed it.

In many diseases substances are produced which are incapable of assimilation. By the mere deprivation of food, these substances are removed from the body without leaving a trace behind; their elements have entered into combination with the oxygen of the air.

From the first moment that the function of the lungs or of the skin is interrupted or disturbed, compounds, rich in carbon, appear in the urine, which acquires a brown colour. Over the whole surface of the body oxygen is absorbed, and combines with all the substances which offer no resistance to it. In those parts of the body where the access of oxygen is impeded—for example, in the arm-pits, or in the soles of the feet—peculiar compounds are given out, recognisable by their appearance, or by their odour. These compounds contain much carbon.

Respiration is the falling weight, the bent spring, which keeps the clock in its mo-

tion; the inspirations and expirations are the strokes of the pendulum which regulate it. In our ordinary time-pieces, we know with mathematical accuracy the effect produced on their rate of going, by changes in the length of the pendulum, or in the external temperature. Few, however, have a clear conception of the influence of air and temperature on the health of the human body; and yet the research into the conditions necessary to keep it in the normal state, is not more difficult than in the case of a clock.—*Liebig's Letters.*

Scientific Agriculture.

How many curious questions are suggested by such observations as the following: Some varieties of wheat are better suited for the pastry-cook; others, for the baker of bread. Some samples of barley refuse to *melt* in the hands of the brewer and distiller; and some yield more brandy; while others lay on more fat. The Scottish ploughman refuses bog oats for his *brose-meal*, or for his oaten-cake, because they make it tough; and the cotter's family prefer Angus oats for their porridge-meal, because they swell, and become bulky and consistent in the pot, and go further in feeding the children at the same cost. The pea sometimes refuses to boil soft; and potatoes, on some soils and with some manures, persist in growing waxy. If Swedish turnips sell for thirty shillings a ton—as in large towns they often do—yellow turnips will bring only about twenty-five, and white globes, eighteen; while all the varieties cease to *feed well* as soon as a second growth commences.

What is the cause of such differences as these? How do they arise? Can they be controlled? Can we by cultivation remove them? Can we raise produce of this or that quality at our pleasure?

Such questions, constantly arising, have led to extended analyses of the food consumed both by cattle and by man; and from these analyses—still far from being complete—most curious, and most interesting, and most practically important results have already been obtained. Let us glance at some of the partial generalizations which have been arrived at, and which may be *provisionally* adopted, by practical men.

We have already seen that all vegetable productions contain from ninety to ninety-eight per cent. of combustible or organic matter. Now, this organic part has been found, in all cases, to contain three different classes of substances:

First, the *starch* class, which comprehends starch, gum, and sugar, and certain other substances of a similar kind.

Second, the *fatty* class, which comprehends solid and liquid oils of various kinds, of which the oils extracted from seeds and nuts are familiar examples.

Third, the *gluten* class, which comprehends the gluten* of wheat, vegetable albumen, vegetable casein, and some other analogous substances, the distinctive characters of which have not as yet been thoroughly investigated.

These several classes of substances are always to be found in sensible quantity in all our cultivated crops; but their proportions vary in different plants, in different parts of the same plant, and in the same part when the plants are grown in different climates, on unlike soils, or by the aid of different manures. Hence the occasional differences in the sensible qualities of the same vegetable, under different circumstances—the waxiness of the potatoe, the hardness of the pea, and the stubbornness of the barley—become intelligible. The several organic constituents of the grain and root crops are present in unlike proportions, and necessarily give rise to unlike qualities.

But their unlike effects, in the feeding of animals, suggested a further train of investigation. The parts of animals are known to be differently built up, or with different degrees of rapidity and success, by these different varieties of vegetable produce;—of what, then, do the parts of animals themselves consist? The answer to this question throws a new and beautiful light upon our path, clearing up obscure points on the way we have already trodden, and pointing out new tracks, which it will prove interesting hereafter still further to explore.

All animal substances—the flesh, bones, and milk, of all living creatures—consist, like the soil and the plant, of a combustible and an incombustible part. In dry muscle and blood, the incombustible or inorganic part does not exceed two per cent., and in milk evaporated to dryness, seven per cent.; while in dry bone it amounts to about sixty-six per cent. of the whole weight.

The combustible or organic part consists

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* When wheaten flour is made into a dough with water, and this dough is washed with a stream of water upon a sieve, as long as the water passes through milky, a tenacious substance, like bird-lime, remains behind. This is the gluten of wheat. Albumen is the name given by chemists to the white of the egg; and casein, that applied to the curd of milk. Of both of these latter, an appreciable quantity is found in almost every kind of vegetable food.

of fibrin—the fibrous part of lean meat is so called—and of fat. And rigorous analysis appears to show, that this fibrin is almost identical in constitution with the pure gluten of wheat; while the fat of some animals at least, is absolutely identical with the fatty oils contained in certain vegetable productions.

The incombustible part, again, consists of soluble saline substances, and of an insoluble earthy matter, the *earth of bones*. These two classes of inorganic substances exist also in the ash of all plants, though in variable proportions. The stems and leaves abound more in soluble saline matter, the seeds in bone-earth and other phosphates.

These things being discovered, the uses of the several constituents of the food became in some degree manifest. The fat of the animal was derived directly from the fat of the vegetables on which it lived—its muscular fibre directly from the gluten of its food—and the salts of its blood, and the earth of its bones, from the inorganic matters contained in the ash of the plants on which it fed. The plant produced the raw materials, the fat and gluten—the bricks and stones as it were—with which the animal, having received them into its stomach, proceeded directly to build up its several parts.

And as the proportion of the fatty matter was greater in some vegetables than in others, some kinds of food would enable the animal to lay on more fat, or to produce more butter. Others again, in which gluten abounded, would favour the growth of muscle, or the production of cheese; while those of which the ash was richest in bone-earth, would enlarge and more rapidly increase the bones of growing animals. In so far also as the composition of the food was known to be modified by the soil on which it grew, so far might the fattening or growth of stock be considered as directly dependent upon the quality of the land on which they lived, or were fed; and in so far as the application of this or that manure was known to affect the quantity of gluten or fat in the crop, in so far would it be in our power, by varying our manures, to control the ordinary operations of nature, and to raise varieties of produce, fitted especially for this purpose or for that. These deductions opened up a wide field for experiments, both in the practical raising of varieties of food, and in the practical feeding of stock; upon which many zealous cultivators have already entered, and which, if they cultivate it with perseverance and accuracy, they are sure to cultivate with success.

How beautiful is the connexion thus established between the dead earth, the living plant, and the reasoning animal! The life and growth of the animal are dependent upon what it receives from the plant, those of the plant on what it receives from the soil on which it grows. The plant does not always produce, in equal quantity, those substances which the animal requires. It is dependent upon the nature of the soil, even for the proportions of gluten, or of fat, which it is capable of yielding to the wants of the animal; while the inorganic part of its substance is wholly drawn from the spot of earth on which it happens to be placed. It strikes us at first as a curious circumstance, that all vegetable food should contain bone-earth and common salt in some small proportion, and that useful plants should refuse to grow in a healthy manner where these substances are not present in the soil. But this arrangement appears absolutely beautiful when we learn, that without these substances the animal cannot live. The main purpose served by the vegetable is to feed the animal races. This they could not do, if they did not contain all that animals require to form the several parts of their bodies; their bones and blood, as well as their muscles and their fat. Thus the soil imparts to the plant only what it is the special duty of the plant to impart to the animal. Hence the machinery of life—of life animal, as well as of life vegetable—must equally cease to move, if the soil be deficient in any of its necessary ingredients. How much, therefore, both of the direct or cropping, and of the indirect or manufacturing branches of rural economy, depends upon the chemistry of the soil!—*Edinburgh Review.*

For the Farmers' Cabinet.

Uselessness of Dogs.

To the Editor,—There have appeared in the Cabinet and other papers, occasional commendations of the dog. Many anecdotes have been related, showing the sagacity, fidelity and usefulness of this creature; but it is nevertheless a question of grave importance, whether his benefits to the community are equivalent to the injuries he commits. In France and other countries of Europe, where the dog is trained to perform the duties of the shepherd, in the care and defence of the flock—where, fences being scarce, his vigilance supplies their want; or where beasts of prey abounding, he protects his charge from their depredations—the dog is certainly a valuable, if not essential part of a farmer's stock. But in this section of our country, he has not these arguments in his

favour. He is so far from being useful in the management of sheep, that they flee at his approach. In regard to tending other stock while feeding, he is here applied to no such purpose. As fences are general, an officer to take their place is seldom needed; and were it otherwise, I have never known a dog to which such a post could be trusted. But it is urged—our stock "get into mischief," and then a dog is very convenient to drive them out. Good management on a farm requires such precautions in securing domestic animals, that their "getting into mischief" would be a thing so uncommon, that even the dog would think it strange. And when such accidents do occur, the dog, in the state in which we have him, is quite an unsuitable agent to displace intruders; his headlong way of doing the business may double the amount of damages. The more quietly intruders are driven from a grain field, the better.

With respect to his utility in guarding our possessions by night, from the intrusions of man and beast, it may be observed, the dog is so faithless to his trust, that he frequently leaves home to become a depredator himself. It is a plain fact, that in some instances,—and I have no doubt there are many—the farmer apprehends nightly injury from scarcely any thing but dogs. We are nearly free from wild animals which would annoy us; and by human thieves, in the country, we are seldom disturbed; but dogs are nightly prowling around us, ready to devour whatever may suit their purposes. Thus they cause to the public the very evil they were designed to prevent.

Conspicuous among the depredations of the dog, is the ravage he annually commits upon our flocks. So great is the injury which farmers thus sustain, that many good services must be brought to bear against it, to countervail our loss. In some sections of our country, a tax is levied upon the canine race, to cover damages in this particular, and this is an excellent provision where no better can be had. But who that has a sheep for whose welfare he has the least concern, would sacrifice it to the dogs for twice its value in money? The wounding, mangling, and murderous butchery of a flock of sheep by the wanton riot of a *dog*, is a circumstance painfully revolting to our better feelings, and calls loudly for effectual redress.

Another point in which dogs are felt to be a nuisance, is the inhospitable reception they give to every stranger or visitor, who approaches their master's premises. They act upon the supposition, that every stranger is an enemy to the family they belong to, and must not be admitted until some one comes to decide upon the intruder's character. In olden times when men were secure at home, only in walled towns or fortified castles—when it was deemed unsafe to walk abroad unarmed—when every man was viewed with suspicion until he was ascertained to be a friendly acquaintance, a mastiff might have been a very suitable officer at the gate of a mansion, his feelings being in consonance with those of his master. But these barbarous days have passed away. These sentiments of jealousy and deeds of darkness have vanished before the beams of social order and Christian refinement; and while all the other arrangements of a farmer's establishment are tuned to harmony and peace, it is sadly out of place to require every one who visits him, to strike at his approach, such "a peevish, dissonant, rebellious string," as a dog.

The last argument against dogs I shall here notice, is their liabilty to madness. Of this terrible malady—hydrophobia—little need be said. The dread of it entertained by perhaps every one, is sufficiently great, but it may be observed, that without dogs we should be free from it.

In pointing out a few of the evils which the community of men suffer from that of dogs, I just wish to call public attention to the subject. Let every one who owns a dog, calmly consider whether the public, i. e., himself and his neighbours together, would not be better off without him. If he come to the conclusion that he cannot spare him, let him at least be very careful that no one shall suffer in person or property, by the threats or violence of his dog. D.

Cecil co., Md.

Acquired Knowledge among Farmers.

Those who are connected with agriculture are not inferior in natural intelligence to any other class of the community. And yet it is not denied, that both owners and tenants, as a body, possess less of that acquired knowledge which specially relates to the art by which they live, than those who hold the same station in reference to any of our great manufacturing arts. This is to be ascribed to the small value hitherto placed upon any other than practical instruction in reference to agriculture, and to the consequent absence of nearly all public provision for acquiring it. Notwithstanding the acknowledged importance of the art of culture, no regular course of instruction in connexion with it is given in the English or Irish universities. There is indeed a Professor of rural economy at Oxford, but there

is no Class, and therefore only occasional lectures. In the universities of Edinburgh and Aberdeen, there are Chairs of agriculture: but even in Scotland no provision has yet been made for a *systematic* agricultural education. The Edinburgh Chair is, however, numerously attended, and has the advantage of an illustrative Museum.—*Edinburgh Review.*

Adulterated Milk.

The inhabitants of large cities are constantly complaining, and with very good reason, that the article sold to them under the name of milk, is systematically adulterated. The udder of the cow supplies merely the basis of the compound; water, and certain foreign substances to give it the requisite whiteness, forming the other ingredients. The colouring matter is made from things of which the public at large have very little notion. The prevailing belief regarding the London milk manufacturer is, that chalk is their favourite pigment. Their brethren of Paris, however, employ a more extensive range of adulterating substances—such as flour, plaster of Paris, calves' lights, and a still more extraordinary animal substance, namely, dogs' brains.

This system of adulteration is the more abominable, when we consider that, of all species of food proper for the support of human life, milk is the most useful. It is unlike any other aliment in this respect—that it has the power of sustaining life without the assistance of any other sort of sustenance. Though man cannot live by bread alone, yet nature can be fully sustained by milk, were he reduced to have nothing else to sustain him. Its consumption, therefore, is very great in every part of the world except in China, where it is never used as a beverage. It has been computed that the average consumption of milk in Paris during the year 1837, was about 15,000 gallons per day. What the daily consumption of London may be, is not to be ascertained. If we reckon it in proportion to the population of the two cities, about 30,000 gallons of milk may be consumed every day in the great metropolis.

In Paris, everything is done, from the highest function of government to the pettiest public convenience, by an "administration." Hence the purveyance of milk to the Parisians is effected by an "*administration*" which was formed by, and remains under the surveillance of, Monsieur the prefect of police. The whole country around the capital is laid under contribution to supply it with milk, some of which comes from a distance of fifty miles. The details of this important *administration* are as follows:—In certain villages near to Paris, are situated large establishments, which serve as depôts for the reception and distribution of milk. Of the largest, one belongs to M. Delanos, at Cormeille-en-Vixen, on the road to Dieppe, and another to M. Delacour, at Envery. From each of these central establishments—*laiteries centrales*—a number of light carts are despatched twice a day, to collect the milk from the different farmers, each having a round or district of its own. These vehicles start and arrive with the punctuality of a clock, so that, if the country people are not ready with their quota of milk at the minute the collector calls, they lose the sale of it. These collections are so managed, that each charioteer arrives at the central depôt with his milky freight exactly at the same hour. A certain portion of it is retained in the house to be converted into cream, butter, and cheese, and the rest is sent on direct to Paris. M. M. Delacour and Delanos have distributed throughout the capital a vast number of little milk shops, which their friend the prefect of police, has placed in such parts of the town as will prevent rivalry between them; so that each of these great milkmen has a separate territory, over which—in the matter of milk—he despotically presides. From these local depôts—*laiteries*—the public obtain their milk with a punctuality quite equal to that with which they receive letters through the post. M. Delacour rents above seventy of these small shops; but the older established, M. Delanos, boasts of nearly double that number. There are, besides, smaller proprietors in direct correspondence—by rail-road and other public conveyances—with cow-feeders and farmers in the neighbourhood of Paris. M. Lenoir, an eminent statist, computes that, in 1837, about 8,760,000 francs—above £350,400—were spent for milk in Paris.

The milk-trade of London has, like that of Paris, its great proprietors. Of cow-keepers, the representatives of the late Mr. Rhodes, of the Hampstead road, and of Mr. Laycox, of Islington, must be considered the aristocracy. There was a tradition respecting the former gentleman's establishment, which may serve to show its magnitude; namely, that so many as a thousand cows could never be maintained upon it; for so sure as the thousandth was added to the stock, one of the nine hundred and ninety-nine died, so as to leave that exact number alive, and no more. The herd of the Islington proprietor is, we have been told, equally

large. There are, besides, less cow-feeders, whose stock varies from twenty to a hundred head.

To the establishments of the larger suburban proprietors, milk retailers repair twice a day, purchase the article at the wholesale price, take it to their own homes, where—unless the craft be much libelled—the quantity is much increased at the expense of the quality, before delivered to the public. The London milk-trade, then, is divided into two great branches, consisting of those who keep cows, and those who merely sell milk. Sometimes, however, these two departments are united, and the same individual retails the produce of his own stock, which in an overcrowded city like London, is almost universally stall-fed. The denizen of the provinces, while threading his way through a dense, close, and pestiferous neighbourhood, may be occasionally startled, while peeping into a cellar, or what was once a parlor, to behold a cow or two tied up to a sort of manger, there in all probability to be imprisoned during the term of their natural lives, never having enjoyed the sight of a green field since the days of their calfhood. The milk yielded by these unlucky animals, must be of a very inferior description; yet even that is adulterated. According to the occupation abstract of the census of 1841, the number of persons employed in feeding cows and selling milk, was 2764.

It is perhaps wrong to stigmatize the whole of these individuals as deteriorating the article they deal in; for, doubtless, a great many are honest traders, and do not sophisticate their milk. One thing is certain, that some in this line of business, lest they should be suspected of the practice, drive their cows about the streets, and guarantee the genuineness of the commodity by milking the poor beast before the customers' eyes. Yet adulteration must be very generally carried on, else "the chalk and water of London" could never have so firmly established itself as a proverb as it has done. It is said of a celebrated comedian, that when he first came to London from the rural districts, he imagined that real milk was unattainable; and finding the chalk and water supplied to him as such, very badly mixed, he one morning, in the simplicity of his heart, presented two vessels to the milk-seller, saying, "he would, if convenient, take the ingredients separate, for he preferred mixing them himself." As a fresh proof of the difficulty of obtaining good milk in London, we may instance the fact, that in noblemen's families, where the consumption is great, the supply is drawn directly from farms in the vicinity of the metropolis. The great tavern and hotel keepers have taken dairy farms on their own account, in despair of obtaining genuine articles by other means.

It must not, however, be inferred that London is the only place where milk is adulterated. With all the centralising regulations of the Paris police, the article is very largely vitiated in that city, and, we are led to believe, in every other place where the demand for the nutritious aliment is great. Many have been the efforts to suppress this fraudulent manufacture; but hitherto they have proved abortive. Lately, however, science has aided in the detection, and a certain Dr. Donné has invented two instruments, by one of which the proportion of water added to any quantity of milk can be readily found out, while the other enables us to ascertain the relative richness of cream. The first will prove of essential value not only to the London public, but to the inhabitants of all large cities. It is called a lactometer, and consists of upright tubes of glass placed one within the other. The suspected milk, poured into this simple machine, very soon separates itself from the adulterating water, the proportion of which to the rest of the liquid, shows itself by means of a scale of degrees marked on the outside of the tube. We have not yet heard whether the hawk-eyed police of Paris have adopted the invention as a detective power, but a paragraph from a Belgian journal assures us that the Brussels officials have. On the 27th of last June, a body of police, armed with lactometers, posted themselves at the gates of the city, and condemned and seized no fewer than eighty large cans of milk. The consequence has been, that the denizens of Brussels have subsequently had no cause to complain of being supplied with bad milk. Thanks to Dr. Donné, his lactometer, and the municipal police, they get the full benefit of some of the finest milch cows in the world, which feed upon the unequalled pastures of the Belgian meadowland.

The lactometer would be a useful instrument in the hands of the London public. By it they would at least be able to ascertain how much water they are made to drink in their milk, and thus, by discovering the extent of the adulteration, gradually remedy it. We have not seen either of the learned Donné's machines, and are indebted for a description and figures of them to the 86th number of *L'Illustration Journal Universél.—Chambers' Journal.*

In all your reckonings, be careful to remember the final account.

For the Farmers' Cabinet.

I. W. Roberts' Durham Steers.

An account of two Durham Steers, raised and fed by Isaac W. Roberts, Esq., of Montgomery county, Pa.

The larger Steer was six years old; he had been stall fed two winters and one summer, principally on ground Indian corn and oats, with a few sugar beets. He was for his size a very light eater, averaging in winter, about nine quarts per day, and six quarts in summer, with the advantage of good natural grass for pasturage. When under four years old, he had during winter, a few sugar beets with a little wheat bran, and was always fed on good hay. He was a remarkably close built and thick set animal, and formed almost the perfect solid parallelogram, which is the grand desideratum of the English grazier. Besides which, every point essential to a good beast, was filled out, prominent and complete; he was in a word, a *thoroughly fat* animal. His hide was unusually light and clear, being almost semi-transparent. The loose fat and entrails were very small. He was exceedingly rich, fine and broad on the back and loins, and not less full and prominent on the ribs, flanks, &c. He was in every point all that the most fastidious butcher or grazier could desire, and probably in fatness and form, has never been excelled, if equalled, in this eminently grazing district.

He was not unusually large, but the weight and measure may be of interest for comparison, and we therefore give them. Live weight about 2,600 lbs.—dead neat weight 1826 lbs; three feet through the shoulders; three feet seven inches through the ribs; and two feet six inches across the hips; depth of shoulders, three feet seven inches; girth behind the shoulders, nine feet six inches; around the first ribs, 10 feet five inches; over the hips, nine feet three inches; length from the point of the withers to the set of the tail, six feet seven and a half inches; do. from the root of the horns to tail, eight feet three inches. The smaller steer was five years old, he weighed alive 2285 lbs., and dead 1503 lbs.; he was not so fat as his companion, but equally fine in quality; his feed was precisely the same in kind and quantity. He was a beautiful steer, and was by some as much admired as the larger animal, but in form and valuable points, was not so prominent, or conformable to the requirements of the butcher and grazier. The larger steer was seven-eighths Durham; and got by Col. Powell's "Frolic;" the other was three-fourths Durham, and his sire was Mr. Kelly's celebrated "Prince of Wales;" both were the progeny of Mr. Roberts' distinguished butter and stock cow, "Rosanna."

They died well, and the beef made a beautiful display on the shambles. The city butchers, although frequently invited, declined buying, or even looking at them, and without any *assignable* cause. Their owner was therefore compelled to have them exhibited on the *Farmers' Stalls*, and they were brought to market by Messrs. Levering and Sons on the 1st instant, and sold on his own account. Some apprehension was felt that so much fat and heavy beef could not be disposed of, without the agency and skill of the city victualers; but the result proved highly satisfactory; every pound was sold, and at fully remunerating prices. It will we hope be the means of improving to the citizens of Philadelphia, this new source of supply.

Very respectfully, A. S. Roberts.

Philadelphia, March 5th, 1845.

Some birds have a great deal of humour in them, particularly the raven. One that belonged to me was the most mischievous and amusing creature I ever met with. He would get into the flower garden, go to the beds where the gardener had sowed a great variety of seeds, with sticks put in the ground with labels, and then he would amuse himself with pulling up every stick, and laying them in heaps of ten or twelve in the path. This used to irritate the old gardener very much, who would drive him away. The raven knew that he ought not to do it, or he would not have done it. He would soon return to his mischief, and when the gardener again chased him—the old man could not run very fast—the raven would keep just clear of the rake or hoe in his hand, dancing before him, and singing as plain as a raven could—"Tol de rol de rol! tol de rol de rol!" with all kinds of mimicking gestures.—*New Monthly Magazine.*

Burning Smoke.—At the last session of the British Parliament, it was enacted that from and after the 1st of last month, the furnaces of Manchester and Salford shall consume their own smoke or pay a penalty of 40s. a week for not doing so. As a matter of economy, therefore, the factory people have found it necessary to comply with the law. The smoke is effectually prevented by an extremely simple contrivance, and unattended with any trouble or difficulty to the engineers; the plan consisting merely of the introduction into the furnace of a due proportion of atmospheric air, whereby perfect combustion and a considerable saving of fuel are effected.

Annual Sale of Stock at Worton.

The first annual sale of Mr. James Glass' stock took place on Friday last. No man in this county has given more attention to the improvement of stock than Mr. Glass, a circumstance which ensured him a large and most respectable company, not only from this, but from the adjoining counties. Mr. Glass, after regaling his friends, to the number of about three hundred, with a most substantial lunch, introduced the business of the day by pledging himself, under a penalty of 100*l.* to the last bidder, that no lot should be bought in. The young bulls he would put in at a nominal sum, and they were all sold at the following prices:—

Young Prince,	£38 0
Favourite, calved 14th June, 1843,	42 0
Antonio, calved 20th May, 1844,	44 2
Hogarth, calved 7th April, 1844,	25 0
Commodore, calved 8th April, 1844,	21 0
Wellington, calved 2d Feb'y, 1844,	32 10

The dairy stock sold at from 15*l.* to 22*l.* each.—*Wilts Independent.*

EXCRETORY DUCT OF THE FEET OF SHEEP. Chancellor Livingston, 1st President of the N. Y. State Agricultural Society, says the legs of sheep are furnished with a duct, which terminates in the fissure of the hoof; from which, when the animal is in health, is secreted a white fluid, but when sickly, these ducts are stopped by the hardening of the fluid. He says he has in some instances found that the sheep were relieved, by merely pressing out the hardened matter with the finger from the orifice of the duct in each foot; it may in some cases be proper to place their feet in warm water, or to use a probe or hand brush for cleansing this passage.

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

PHILADELPHIA, THIRD MONTH, 1845.

PHILIP REYBOLD, of Delaware, who has for several years been so well known for his remarkably fine flock of Bakewells, sent to this city about two months ago, on their way to New York, in the cars, fifty of perhaps as fine ewes and wethers, as could be shown by any part of the country. They had been purchased by Moses E. Arment, a victualler of New York, at the price, as we understood, of seven and a half cents per pound, live weight. They were part of a lot of two hundred, sold to the same person,—were two and three years old, and weighed from 180 to 200 pounds. Fine Leicesters these!

A VERY spirited effort has been made at Richmond, Va., to form a State Agricultural Society. They say that $1,500 annually, will be needed to enable them to carry out their views. It is proposed to raise this amount partly by yearly subscriptions of members—by a State appropriation of $10,000, to be properly invested—and an investment of $10,000 more, to be raised by private subscriptions and donations. Our valued friend Edmund Ruffin, was elected President, and C. T. Botts, Corresponding Secretary.

THE American Rail Road Journal states, that the Stockton and Darlington Railway Company has recently carried over the great North of England rail road into York, 8,000 tons of coal in twenty-six hours. Reckoning two and a half tons to a wagon load, that would be 3,200 wagons, which, at forty wagons to a train, would be eighty trains, or one train every nineteen and a half minutes. One may well ask, how did they contrive to get rid of it? It is said, the same company has contracted to furnish locomotive power to transport coal and coke over their road, at the low rate of one eighth of a penny per ton per mile.

SALE OF FULL-BLOODED NORMAN HORSES.

The subscriber having relinquished Farming, will offer at Public Vendue, at his Farm in Moorestown, Burlington County, N. Jersey, nine miles from Philadelphia, on Tuesday, the 20th of May next, his entire Stock of NORMAN HORSES, consisting of two Imported Stallions, "Diligence" and "Buonaparte;" two Imported Mares—three full-blooded Stud Colts, one, two and four years old—two full-blooded Fillies, three and four years old—two Fillies by "Diligence," from a half-blood Canadian Mare, three and four years old, and one Filly four years old, by "Diligence," from a well-bred English Mare, broke and kind to harness.

The undersigned deems it unnecessary to speak at large of the qualities of these horses, so much having been said of this particular importation, (which is believed to be the only one ever made to the United States,) in all the principal Agricultural papers. In a few words, they are the *Canada* Horse, on a larger scale, combining the form, activity and hardihood of that well known race, with greater size and strength. "Diligence" has been a remarkably successful Stallion; he has been exhibited at the Fairs of the Pennsylvania and New York Agricultural Societies, where he was not entitled to compete for the premiums, but received the highest encomiums from the Committees. At the Fair of the American Institute, in New York city in October last, he received the Silver Medal of the Institute.

It is expected that a large number of the Colts of "Diligence" will be on the ground on the day of Sale, some of which, no doubt, may be purchased.

EDWARD HARRIS.

Moorestown, Burlington Co., N. J.
March, 15th, 1845.

☞ The American Agriculturist, N. Y.,—Cultivator, Albany,—New England Farmer, Boston,—Genesee Farmer, Rochester,—Ohio Cultivator, Columbus,—American Farmer, Baltimore, and Southern Agriculturist, Charleston, will please insert the above on 1st of Fourth mo. (April,) and 1st of Fifth mo. (May.) and send their bills to this office, for payment.—ED. F. CABINET.

H. L. Ellsworth, the *Commissioner of Patents* at Washington, will accept very hearty thanks for his highly valuable Annual Report for the year 1844; and also for another package of seeds, which have been distributed. In running the eye through the Report, we observe much that we shall be likely to transfer for the benefit of our readers, who may not have access to it.

Rural Economy, in its relations with Chemistry, Physics, and Meteorology; or, Chemistry applied to Agriculture; by J. B. Boussingault, member of the Institute of France, &c., translated, with an Introduction and Notes, by George Law, Agriculturist.

This work has just issued from the press of D. Appleton & Co., No. 200 Broadway, New York, and G. S. Appleton, No. 148 Chesnut street, Philadelphia. A very neat copy has been placed on our table, and on looking hastily through it, we are well satisfied that a valuable addition has been thus made to the amount of important agricultural information within our reach. M. Boussingault is not by any means a mere theorist, or man of science—he is a practical farmer, watching closely all the operations of his plantation at *Bechelbronn*, in the east of France; and handling the balance himself, weighing his calves, &c., from day to day, as well as the produce of his fields, has ascertained with scrupulous exactness the facts which sustain the very interesting results now published. He has for many years been engaged in these inquiries, and while as a man of letters, he has held a high position at the side of such men as Arago, Biot, and a Dumas, he has, like Cincinnatus, been occasionally found guiding his own plough. The chapters on *Soils*, *Manures*, *Rotation of Crops*, *Feeding of Animals*, will be found to embody many important leading principles in relation to these primary objects with the farmer. In every country the great fundamental principles of agriculture are the same, and it is for the intelligent practitioner to make them subservient to his interests; and to do this, let him avail himself of all the means within his reach. Of all men, it will not do for the farmer to sit idly with his arms folded, and say *I already know all things*.

The work, a duodecimo of more than 500 pages, may be procured either at the office of the Farmers' Cabinet, or at the book store of the publishers, No. 148 Chesnut street,—price $1.50

The following premiums will be awarded by the Pennsylvania Horticultural Society, at its stated meeting on the 15th of next month. Those to be given on the 18th inst., we published a month ago.

For the best Pelargoniums, (Geraniums,) ten named varieties, in pots, $3.

For the next best, do. do. $2.

For the best Hyacinths, ten named varieties to be exhibited, $3.

For the next best do., ten named varieties, $2.

For the best Pansies, six varieties to be exhibited, $2.

For the next best do. do. $1.

For the best Auriculas, four named varieties to be exhibited, $3.

For the next best do. do. $2.

For the best Polyanthus, six named varieties to be exhibited, $3.

For the best forced Cucumbers, four in number, $1.

For the best Sea Kale, two bunches of one pound each, $3.

Our valued friend M. S. Thomas, of Chestertown, Md., will receive thanks for the package of *Mimosa* seed, so kindly forwarded: they are in course of distribution as directed. She has one of these highly ornamental trees,—which she raised from the seed,—now ten years old. Though at first it died down, for a couple of winters before it became acclimated,—the seed having come from the South,—it is very flourishing, and has attained the size of a large peach tree. "The foliage," says she, "is beautiful; the flowers very handsome. It commences blooming in June—continues for a month, and has bloomed twice some years, but more sparingly the second time. I cannot convey an adequate idea of its beauty when the sun is on it in the evening." It apears to be free from liability to attacks from insects—the caterpillar even, avoiding it entirely. The seed should be prepared for planting in a light and rich mould, by having water very nearly boiling, poured over them at night—allow them to stand in it till morning: all that are swelled, plant—scald the balance again, and when swelled, plant them. When up, weed them carefully by hand, as a hoe injures the roots which run near the surface. When three or four inches high, tie them to a stake, or they will hardly become trees, the tops inclining to approach the earth, like the the Banyan.

Those who are curious in these matters, will please call and get some of the seed.

In a note from D. Lloyd, of Montgomery county, he speaks highly of the advantages that would result to farmers from a general propagation of the Red cedar—*Virginian Juniperus*. He considers it useful for many purposes on the farm, from its lightness, toughness, and durability; and thinks it would be worth while, on the edges of plantations which are a good deal exposed, to plant these trees to break off the cold winds; thus affording a shelter to stock. He mentions also their beauty, fragrance and adaptation for the purposes of the Cabinet maker.

It may be mentioned by the way, that the editor has frequently heard it remarked, that the Red cedar in the vicinity of thorn hedges, was thought to be particularly injurious.

Some apples of a superior flavor, as well as some scions from the original tree, producing what in Vermont, is called *Jewett's Best*, were lately left with us by Solomon W. Jewett, of Weybridge. The grafts have been distributed among those who will take proper care of them; some were sent to our friend Boswell, of this city, who has a nursery in the vicinity; and a couple of apples were also given him. He is famous for his wax fruits, and will probably take a fac simile of this apple. It is quite celebrated in Vermont, and has been introduced into some of the best nurseries abroad.

COLMAN'S AGRICULTURAL TOUR IN EUROPE.

It will not be forgotten that subscriptions to this work, are received at the office of the FARMERS' CABINET; where every farmer in the country will be heartily welcome as a subscriber to these publications. Single Numbers will be sold. The subscription price of Colman's Tour, as we have repeatedly advertised, is $5; single Numbers fifty cents each.

By a letter lately received from the publisher in Boston, we regret to learn that the third number has been somewhat delayed by the indisposition of our friend Colman. It was also delayed by a visit paid to several large and well conducted estates, for which he received polite and urgent invitations, only a short time since. He says he was abundantly paid for the time spent upon them. In his desire to make the work valuable, he spares no expense of time and money, to obtain correct and useful information. The manuscript is looked for by the steamer on the 20th instant, and we hope to be ready to deliver it in the early part of the Fifth month.

THE Report for the year 1844, of the Pennsylvania Hospital for the Insane, situated a couple of miles on the other side of the Schuylkill, has been kindly forwarded by Dr. Kirkbride, physician to the Institution. We have read it with great interest. Though there is certainly abundance that is sufficiently humiliating in the revelations recently made to different Legislatures, by the indefatigable and philanthropic D. L. Dix, yet it is not a little cheering to contemplate the improvements which have been made within the last quarter of a century, in the mode of treating this most afflicted class of our race. The improvements are clearly developed in this, and Reports of similar Institutions, which are annually thrown before the public. The history of a nation, it has been said, may be read in its statute book: and so, too, most unquestionably, are strong evidences afforded, of its advancement or otherwise, in Christian practice and substantial civilization, by the modes most general in the treatment of the insane.

The employments of the garden, the field, and the workshop, are resorted to as eminently calculated to divert and improve the minds of the unsettled; and although from occupations of this kind, a small pecuniary advantage may result, this is as nothing, says the Doctor, "in comparison with the beneficial effects produced on the health of the patients. The true profit of labour about an insane hospital—and it is a profit that cannot be estimated in money—consists in the tranquility and repose which are given to irritable and excited minds, the removal of painful thought, the comfort of a quiet evening after a day's toil, the sound and refreshing sleep, the blessings of a good digestion, and all the happy results which follow these advantages." The spirit of kindness and law of love, even for those deprived of the use of their reason, remarkably characterise this Report; and it appears to us they are brought into operation manifestly to the advantage of all who are under the Doctor's care.

JOURNAL OF PRISON DISCIPLINE AND PHILANTHROPY. This work is published quarterly under the direction of the *Philadelphia Society for the Alleviation of the miseries of public Prisons.* It is an octavo of 96 pages, and the subscription price $2 per annum. The object of the work may be readily gathered from the title, and from the high character of the Society who have charge of it. It is published from the office of the Farmers' Cabinet, where subscriptions and payments will be received. Money transmitted from a distance to Josiah Tatum, No. 50 N. Fourth street, Philadelphia, kindly franked by the post-master, will ensure the prompt return of the work as published.

Agency for the Purchase & Sale of IMPROVED BREEDS OF CATTLE.

THE subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay. AARON CLEMENT.

March 15th, 1845.

WE keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	$4 00
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	60
Complete sets of the FARMERS' CABINET, half-bound, 8 vols.	6 50
DOWNING'S Landscape Gardening,	3 50
DARLINGTON'S Flora Cestrica,	3 00
RELIQUIÆ BALDWINIANÆ,	1 00
AMERICAN Poulterer's Companion,	1 25
BEVAN on the HONEY BEE,	31½
BUISTS' ROSE MANUAL,	75
SKINNER'S CATTLE DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
JOHNSTON'S Agricultural Chemistry,	2 25
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
" ANIMAL CHEMISTRY,	25
" FAMILIAR LETTERS,	12½

As well as his larger works on Chemistry and Agriculture.

Subscriptions will be received for Colman's Agricultural Tour in England and on the Continent.

☞ We are prepared to bind books to order.

ERASTUS H. PEASE, of Albany, will shortly publish, if indeed by this time he has not already published, A CATECHISM OF AGRICULTURAL CHEMISTRY AND GEOLOGY, by *James F. W. Johnston, M. A., F. R. S. S. L. & E.*, with an Introduction by *John Pitkin Norton*, of *Farmington*, Connecticut. This will, we apprehend, be a valuable work, judging from the well known character of the author. It will, as soon as it appears, be for sale at George S. Appleton's, No. 148 Chesnut st., and at this office.

Particular attention is invited to the Sale of Edward Harris' Norman Horses, at Moorestown, New Jersey. It is very rarely that farmers of the United States can avail themselves of an opportunity for the purchase of such stock.

PHILADELPHIA AGRICULTURAL, HORTICULTURAL, AND SEED WAREHOUSE.

No. 194½ Market street, between Fifth and Sixth streets, South side.

For sale as above, Prouty & Mears' Patent Centre Draught Self-sharpening Ploughs, with all the new improvements attached. These ploughs have taken nine premiums the last fall, in the States of Pennsylvania and Delaware. Subsoil ploughs for one or two horses—Taylor's new Patent Straw-cutters—Guillotine Improved do.—Corn-Planters—Cultivators—Harrows; Turnip-Drills, &c. Garden tools of every description. Also, *Vegetable* and *Flower seeds*, crop of 1844, grown for this establishment, and warranted true to name. Among the collection are several new kinds, very superior—as Seymour's White Giant Celery—Union Head Lettuce. Also, Peas—Beans—Potatoes, &c.—Fruit-trees—Bulbous roots, &c., for sale at the lowest prices, by D. O. PROUTY.

Poudrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the Farmers' Cabinet, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Present price, $1 75 per barrel, containing four bushels—$5 for three barrels—$15 for ten barrels, or thirty cents a bushel. Orders from a distance, enclosing the cash, with cost of porterage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. We were entirely unable last spring to supply the demand, though it was then but an experiment in this vicinity. The results on corn have been generally very satisfactory. Early applicants will be most certainly supplied. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. JOSIAH TATUM.

☞ SHORT ADVERTISEMENTS, ☜ The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

Seed Store,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red clover, and other grass seeds. Field seeds, consisting of Spring and Winter Wheats, Potatoe, Oats, Barley, and choice varieties of Seed-corn. Also in season, Fruit and Shade Trees. Garden and Bird seeds generally. Guano in parcels to suit purchasers.

M. S. POWELL.

Philad., March 15th. tf.

The quantity of rain which fell during the Second month, 1845, was about four and three-quarter inches. ..... 4.738 inches.

Penn. Hospital, 3rd mo. 1st.

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Terms.—One dollar per annum, or five dollars for seven copies—*payable in advance.*

All subscriptions must commence at the *beginning* of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For six dollars paid in advance, a *complete set* of the work will be furnished in numbers, including the ninth volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly *half-bound and lettered.* Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage: that is, one cent on each number within the state, or within one hundred miles of the place of publication out of the state,—and one cent and a half to any other part of the United States—and Post Masters are at liberty to receive subscriptions, and forward them to the Publisher under their frank—thus affording an opportunity to all who wish it, to order the work, and pay for it without expense of postage.

Joseph Rakestraw, Printer.